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"A STUDY OF PREMORBID ADJUSTMENT, CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS IN A TERTIARY CARE HOSPITAL"

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CERTIFICATE

This is to certify that this dissertation entitled **"A STUDY OF PREMORBID ADJUSTMENT, CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS IN A TERTIARY CARE HOSPITAL"** submitted by **Dr. NIRMAL.R** to the faculty of PSYCHIATRY, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, in partial fulfilment of the requirements in the award of degree of M.D. (PSYCHIATRY) Branch -XVIII for the April 2015examination is a bona-fide research work carried out by him during the period of July 2014 to September 2014 at Government Stanley Medical College & Hospital, Chennai, under our direct supervision and guidance of **Prof. Dr. T.V.ASOKAN M.D. DPM.**, Professor and Head of the department, Department of Psychiatry at Stanley Medical College, Chennai.

Prof. Dr . T.V.ASOKAN M.D., DPM.,
Professor and HOD,
Department of Psychiatry,
Government Stanley Medical College and Hospital,
Chennai – 600 001.

Dr.AL. MEENAKSHI SUNDARAM M.D., D.A.,
DEAN
Government Stanley Medical College and
Hospital, Chennai – 600 001.

CERTIFICATE

This is to certify that this dissertation titled **"A STUDY OF PREMORBID ADJUSTMENT, CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS IN A TERTIARY CARE HOSPITAL"** submitted by **Dr. NIRMAL.R** is an original work done in the Department of Psychiatry, Government Stanley Medical College and hospital, Chennai in partial fulfilment of regulations of The Tamil Nadu Dr. M.G.R. Medical University, for the award of degree of M.D. (PSYCHIATRY) Branch – XVIII, under my supervision during the academic period 2012-2015.

Prof. Dr. T.V.ASOKAN M.D. DPM.,
Professor and Head of the department,
Department of Psychiatry
Government Stanley Medical College & Hospital,
Chennai.

DECLARATION

I, **Dr. NIRMAL.R** solemnly declare that the dissertation **"A STUDY OF PREMORBID ADJUSTMENT, CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS IN A TERTIARY CARE HOSPITAL"** is a bona- fide work done by me during the period of July 2014 to September 2014 at Government Stanley Medical College and Hospital, under the expert supervision of **Prof. Dr. T.V.ASOKAN, M.D, D.P.M.,** Professor and Head of Department Of Psychiatry, Government Stanley Medical College, Chennai. This thesis is submitted to The Tamil Nadu Dr .M.G.R. Medical University in partial fulfilment of the rules and regulations for the M.D. degree examinations in Psychiatry to be held in April 2015.

Dr. NIRMAL.R.

Chennai-1

Date: - - 2014

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A STUDY OF PREMORBID ADJUSTMENT , CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS IN A TERTIARY CARE HOSPITAL

AIM: To study the association between premorbid adjustment and duration of untreated psychosis(DUP) in first episode psychosis .

MATERIALS AND METHODS: socio demographic data ,Mini International Neuropsychiatric Interview(M.I.N.I), Premorbid Adjustment Scale(PAS), Positive and Negative Syndrome Scale(PANSS)

PROCEDURE: 95 patients were recruited into the study based on inclusion criteria . 71 completed the study . PAS and PANSS were assessed initially. patients were treated with medications and PANSS was done again 12 weeks later .

RESULTS : significant association was seen to exist between PAS and DUP . males had younger age of onset , poorer scores in PAS and increased score in negative scale of PANSS . significant improvement was seen at the end of 12 weeks of treatment despite varying DUP .

CONCLUSION : adjustment problems are consistently seen to be present in patients even before the onset of psychosis .

INTRODUCTION

"insanity"- the term at beginning of 19th century denoted delusional states, behavioural disorganization . "alientation"- affections of mind, "dementia"-psychological dilapidation [58]. Canstatt introduced the term PSYCHOSIS(psyche – mind / soul, -osis –abnormal condition). He referred psychosis and resulting change in behaviour to have an organic basis. It replaced the terms madness, folie, pazzia locura, wahsinn . Later Feuchtersleben used psychosis as a meaning for psychopathy. Canstatt and Feuchtersleben thought of an organic basis for mental illness(Martin[58]).

Koch was of the view that Psychopathic inferiorities are due to congenital as well as acquired reasons. But Schneider later termed them as abnormal personalities. Mental illness, mental disorder, insanity were the terms which were in use to represent abnormal behaviour and psychosis was used in their place. By the end of nineteenth century difference between exogenous and endogenous psychosis was made by Mobius.

Endogenous psychoses include mania, melancholy, hysteria, Paranoia. Bonhoeffer found that a psychic syndrome to be the result of various

physical diseases rather than a single physical illness but are similar to each other.With the contribution from Bumke exogenous psychosis received the official status which remains valid till now. It was further subdivided by Krepaelin and Bleuler into schizophrenic disorders, manic-depressive based on how the illness proceeds. “Mixed psychoses” with shared features of dementia precox and manic depressive insanity.

Kasanin in 1933 , introduced the term schizoaffective psychosis. schizoaffective disorders are intermediary disorders where in the symptoms of schizophrenia as well as bipolar disorder are seen.

(Martin[58]) Bleuler introduced the term “acute schizophrenia”. Illness with acute onset but did not have a deteriorating course and 25% remitted . Singh and sachdev disputed the officially held view of ICD -8, ICD- 9 that acute schizophrenia was a subtype of schizophrenia, acute schizophrenia also differed from schizophrenia and manic-depressive insanity .

In ICD-10 the word “Psychotic” has been used as a descriptive term which indicates the presence of hallucinations delusions or a little number of severe abnormalities of behaviour such as a gross excitement

and over activity, marked psychomotor retardation and catatonic behaviour.

DURATION OF UNTREATED PSYCHOSIS:

The term is defined as the interval between first noted psychotic symptom(s) and contact with mental health services(Morgan[57]). Rather than direct measurement of untreated psychosis evidence available towards the possible effect of length of untreated period on psychotic illness comes mostly from the longitudinal observation of long term patients .

In the recent past there have been studies to measure duration of untreated psychosis and relate it to outcome of treatment. Estimating Duration of untreated Psychosis is difficult ,due to the challenge of determining actual date of onset of psychosis , psychosis may be intermittent or episodic , reporting problems due to varying accounts of past illness and symptoms by patients themselves and care givers , lack of fixed criteria for initiation of treatment.

Establishing the relation between duration of psychosis prior to the initiation of treatment is necessary as this is a potentially modifiable

risk factor which would help us in improving the therapeutic interventions, public health and referral services .

(Drake et al[59)] Even before the onset of illness in patients with schizophrenia spectrum disorders changes which could be accounted for the disease occurs in the expression of emotion, social behaviour. They tend to exhibit a decrease in socialisation, less involved with relatives and friends, respond in an odd manner to various stressors, decline in academics, occupational functioning. These results are consistently observed in the recent studies of first episode psychosis patients. Among the changes observed affective symptoms were low, but the derangement in social functioning of the individual higher . As observed in the first episode psychosis FEP patients where the former was <10% but the latter was 40- 75% .

"PREMORBID" is defined as the period ending 6 months before the first psychiatric hospital admission or psychiatric contact, or 1 year before evidence of characteristic florid psychotic symptomatology including delusions, hallucinations, thought disorder, inappropriate or bizarre behaviour, or gross psychomotor behaviour in which the symptoms are not apparently due to organic causes(Cannon-Spoor[22]).

Norman et al[62] Presence of early indicators of psychotic illness is important to us as it helps us in planning preventive strategies which can intervene in the progression of sub clinical signs to established illness.

Henceforth adequate specificity of the indicators have to be established so that they can be used as markers for initiation of intervention and preventive measures .

Presence of impaired social as well as academic functioning even in adolescence, childhood in psychotic patients more than in controls supports the neuro developmental model of schizophrenia. Assessment of premorbid functioning of patients with long term illness has revealed that presence of negative symptoms at first presentation itself, also is related to poor social functioning prior to the onset of illness. Examination of patients at the onset of illness and assessment of behaviour prior to the onset of illness has the added advantage of better reproduction of the observed details by the care givers of the patient.

FIRST EPISODE PSYCHOSIS:

Onset of psychosis is defined as first psychotic symptom determined by clinical interview of subject and family. First episode

psychosis is presentation of the subject to mental health care facility for the first time with psychotic symptoms. (Perkins[9])

Operational definitions for 'first-episode psychosis' fall largely into three categories: (i) first treatment contact; (ii) duration of antipsychotic medication use; and (iii) duration of psychosis.

Most of the studies on FEP are based on the first treatment contact with mental health care services and duration of psychosis.(Sarah[9]) First-episode psychosis does not always present in neat parcels and there may be changes in presentation from the first to the second episode, creating problems for early diagnosis.

NEURO DEVELOPMENTAL MODEL OF SCHIZOPHRENIA

NEURO DEVELOPMENTAL MODEL

OF SCHIZOPHRENIA

The following neurological abnormalities are seen in SCHIZOPHRENIA

1. Disruption in ectoderm development resulting in minor physical anomalies.

2. Absence of inflammatory reactions in the brain of people with a diagnosis of schizophrenia.

3. Decreased dendrites, arborisation, decreased neuronal size, reduced spine density in cerebral cortex, hippocampus.

4. Environmental inputs tend to shape the ultra structure of synapse across the life span.

Put together all these above factors tend to play significant role in the development of psychiatric illness (Gottesman[63]).

Plasticity in the connectivity of neurons plays a vital role in the new learning ability and skills.

Broad variation occurs in the age of onset of illness taking into consideration the cause and effect;

1. Ongoing psychogenic process
2. neuronal migration
3. plasticity in the setting of favourable genetic liability
4. stress in the form of life events
5. other environmental factors a multitude of factors contributing
6. varying interactions between them resulting in expression of full blown illness at a later time compared to the exposure of risk factors (Harrison[66])

EPIGENETIC DYSREGULATION:

Onset of illness tends to occur following additive gene, environmental factors (Gottesman[70]). Other model says a epigenetic dysregulation in gene activity resulting in modification of DNA , chromosomal proteins having impact on regulation of gene

expression via age and hormone dependent neuro chemical changes than structural changes to brain (Harrison[66]) .

LINKAGE STUDIES IN SCHIZOPHRENIA :

Association is found with chromosome 1 q, 5 q , 6p, 8p , 10p, 13q, 15q, 22q.

CHROMOSOME ABNORMALITIES

Further chromosome analysis has revealed candidate genes like

1. alpha 7 nicotinic receptor,
2. DISC-I
3. GRM-3
4. COMT
5. NRG-1
6. RGS-4
7. G-72

dystrobrevin (DTNBP1) and neureglin-1 have been associated with negative features of schizophrenia (Donovan[71]).

COMMON DISEASE/COMMON VARIANT HYPOTHESIS:

common variants result in common diseases. Joint action of several common genetic variants ,each of which has a small effect on illness susceptibility, together with environmental factors.

OPPOSING HYPOTHESIS :

Multiple rare variants in different genes which have low population frequency operate in different individuals . It is more likely that both mechanisms operate in common diseases including schizophrenia as both low and high frequency alleles have been found to contribute several common diseases .

CHROMOSOME 22 Q 11.2 DELETION SYNDROME :

Hemizygous deletion of chromosome 22q 11.2 known as Digeorge/ velocardiofacial syndrome. It presents with multiple phenotypic heterogeneity(Sullivan[68]).

CARDIAC ANOMALIES :

1. hypocalcemia
2. cleft lip/ cleft palate
3. renal abnormalities
4. skeletal abnormalities
5. developmental delay
6. especially speech delay
7. behavioural and psychiatric disorders
8. intelligence quotient typically below normal.

Psychiatric disorders are increased in carriers of this deletion. COMT involved in the metabolism of mono amine is impaired. An increased incidence of schizophrenia followed by bipolar disorder is common in this deletion syndrome.

ACUTE TRANSIENT PSYCHOTIC DISORDER :

described by Meynert .Described by Krepaelin as amentia . A brief period of febrile illness usually precedes the onset of acute transient

psychotic disorder found both in India as well as European studies . In females dysregulation in hypothalamic- pituitary- axis was found in those with recurrent atypical psychoses this findings were not consistent with those of others.

An increase in regional blood flow in the cerebral hemisphere was directly related to intensity of symptoms. A high risk for acute transient psychotic disorder lower risk for schizophrenia and mood disorder was observed in an Indian study. A diagnosis of personality disorder could be made at the time of initial examination. Danish study[82] shows that those who received a diagnosis of personality disorder subsequently acute transient psychotic disorder when examined one year later , only a very few received the diagnosis of personality disorder.

DELUSIONAL DISORDER:

0.18% of prevalence of delusional disorder was studied[25] in Finland .Accounting for 1 to 4 % of psychiatric admission.

Infrequent occurrence of delusional disorder makes it difficult to examine genetic and other risk factors . Family studies of

schizophrenia and delusional disorder indicate that both are independent of each other .

SCHIZOAFFECTIVE DISORDER :

Schizoaffective the term coined by kasanin, initially proposed in the research and diagnostic criteria. The distinction being made between two subtypes as affective, schizophrenic subtypes based on the susceptibility of the relatives of the patient, also the pre morbid functioning . In research setting those with schizoaffective disorder are included in the criteria of schizophrenia. Relatives of those with schizoaffective disorder have higher risk of mood disorder.

Chromosome 1q 42 DISC 1 gene suggest possible involvement in schizoaffective disorder as well as schizophrenia and bipolar disorder.

PSYCHOSIS NOS:

Given the heterogeneity of illness very less studies with family and genetic studies have been carried out. An elevated risk of schizophrenia is seen in relatives of those with psychosis nos rather than mood disorder.

RISK FACTORS FOR ONSET OF SCHIZOPHRENIA

RISK FACTORS FOR ONSET OF SCHIZOPHRENIA :

FAMILY STUDIES:

Family studies on comparison of relatives of who are affected by schizophrenia with those who were not, the morbidity risk was 2 to 9 % for those who were relatives as against 0.5% in the latter group. The risk was also considerably higher for relatives of early onset cases than for relatives of late onset cases. Studies [24] on degree of relationship of the relatives with patients reveal an increasing evidence with increasing closeness among relatives i.e first degree more than second degree followed by third degree. Methodological heterogeneity deters us from generalising the results obtained from various studies.

ADOPTION STUDIES:

ongoing Finnish [25, 69] study shows morbidity risk in adopted children of mothers with schizophrenia of 5.1% where as it was only 1.6% in the children of control mothers.

TWIN STUDIES :

Early onset schizophrenic twins had more concordance rate for monozygotic twins rather than late onset schizophrenia. Higher concordance for hebephrenic subtype than paranoid subtype (kendler[67]).

SPECIFICITY OF HERITABILITY :

Along with the established case of schizophrenia relatives display symptoms signs similar to pathological experiences seen in clinical cases. Attenuated forms of positive symptoms like muddled thinking, ideas of reference suspiciousness, odd speech, magical thinking, illusions odd behaviour. Negative symptoms like social isolation aloofness poor rapport guardedness. This familiar aggregation among relatives have been confirmed by adoption and twin studies, than the positive symptoms of schizophrenia. In a similar manner negative schizotypic features are more prevalent than positive schizotypic features in relatives of schizophrenic patients. When both positive and negative features were correlated for those with schizotypic features negative symptoms showed a higher correlation. Alike prevalence of schizophrenia other disorders

like schizophreniform disorder, delusional disorder , bipolar affective disorder, excess risk has been studied among biological relatives of clinical cases however the substantiality attained for schizophrenia has not been yet reached for other disorders.

Finnish study [25, 69] with the hypothesis of establishing a possibility of liability continuum that affective disorder and other psychotic disorders to be along with schizophrenia resembling the previous concept of unitary psychosis, the results obtained was not favourable. shared genetic effect was studied in Maudsley twin data set encompassing individuals with co-morbidity of schizophrenia, schizoaffective, manic syndromes. For those with schizophrenia, mania the model encompassing both shared and syndrome specific genetic effects fit the data best, while for schizoaffective disorder the shared genetic effect model was sufficient to explain the association. Transition may operate through a set of susceptibility genes specific to schizophrenia and another set specific to bipolar disorder with a third set of common effects across the syndromes.

Findings in these studies are preliminary and the results from these data should be interpreted with caution and with the support of future studies

GENETIC MODEL OF LIABILITY FOR SCHIZOPHRENIA :

POLYGENETIC THRESHOLD MODEL :

Additive effects of multiple small genes lead to incidence of schizophrenia. In case of twin studies this model holds for an exponential increase in incidence of illness this does not occur in reality therefore this polygenetic model cannot be accepted as only way for occurrence of illness . This also does not hold good for the increase in incidence and it includes a complex interplay of both additive and interacting genes, environmental factors, gene - environment interactions which are continuously disturbed within the population.(Wynne[69])

GENE ENVIRONMENT INTERACTION :

The same environment may react with different genes to different extent with the net result of expression of illness in different set of people (i.e) those with genes favouring schizophrenia, affective disorders develop the illness where as those without the illness tend to continue with their normal life. The extent of environmental influence also determines the onset and progression of illness in a favourable back ground. Thus not all with the gene

develop the illness and the illness tends to occur in those with susceptibility factors and with the influence of environment on it (Harrison[66]).

RISK FACTORS ACTING ON EARLY DEVELOPMENT:

Young age (less than20) older than 50 at the time of conception, higher is the risk for schizophrenia. Older age of father posits that advancing paternal age results in accumulation of denovo mutation in the germ cells of older fathers or advancing paternal age interferes with the DNA methylation process of gene expression.

SEASON OF BIRTH :

Kirkpatrick[26] w inter birth has been found to be associated with later development of schizophrenia. Anyway the effect of climatic change at the time of birth has only smaller effect. Studies on the effect weather on the incidence of other psychotic illness are inconsistent. In the study of 25 families of puerto rico with at least two siblings who were diagnosed with schizophrenia. Most of the affected relative were likely to be born during winter months,

interaction between winter months and genetic liability opens the new pathway for research.

PREGNANCY AND BIRTH COMPLICATIONS :

Pooled odds ratio of 2.0 with a confidence interval of 1.6 to 2.4 was obtained for patients with schizophrenia having a history of pregnancy and birth complications (Cannon[77]) compared with significant risk estimate includes.

ABNORMAL FETAL GROWTH AND DEVELOPMENT :

Low birth weight, congenital malformation, small head circumference.

COMPLICATIONS OF PREGNANCY:

Bleeding, Preeclampsia, Diabetes, Rhesus incompatibility.

COMPLICATIONS OF DELIVERY:

Asphyxia, Uterine atony, Emergency caesarean section. Helsinki's population based study showed increasing risk with decreasing birth weight, length at birth, placental weight. National perinatal collaborative project the risk was greater when it

was associated with multiple hypoxic exposures current studies are under powered to detect interactive effects . Also pregnancy, birth neonatal complications do not act independent of one another. Bipolar disorder odds ratio 1.01, unipolar disorder 1.13, 0.61 for schizophrenia was found in a systemic review of pregnancy and neonatal complications. In meta analytic review of 11 case control studies of pregnancy and neonatal complications. 1.5 % was the odds ratio obtained for the early onset group (<22yerars). Those with perinatal hypoxic events tend to have increased structural abnormalities among schizophrenic patients, their non affected siblings.

RISK FACTORS OPERATING DURING CHILDHOOD AND ADOLESCENCE :

There is a two fold increase in risk of schizophrenia in urban compared to rural settings. Rather than a social drift during the prodrome it is exposure of urban living before the onset of illness which has a significant role . Cumulative effect of urban living was studied by Dannish study and states that it is the first 15 years of life which are more critical . The effect of urban exposure is more

in the presence of genetic liability (i. e) with a positive family history (Cougnard[73]).

SOCIAL PROCESS :

Maternal deprivation at an earlier age social fragmentation, ethnic composition all tend to have an influence in the onset of psychosis. Mutual aid, norms of reciprocity, inter personal trust tend to improve the environment and reduce the incidence of psychotic illness independent of the maternal deprivation.

Migrant studies although the pooled effect size suggested a three fold increase in size there was evidence of systematic heterogeneity across studies that could not be accounted for by variation in study design.

CANNABIS USE :

The association between schizophrenia and cannabis, Studies [25] have been done to establish the association between cannabis use and emergence of positive and negative symptoms. Swedish conscripts followed up for 27 years who had used cannabis in their adolescence estimated an odds ratio of 1.5 after adjusting for disrupted behaviour, low intelligence quotient. Cannabis tends to reduce the distress emerging

out of psychotic symptoms. Among users of cannabis the age of onset was early, when use has occurred in adolescence. Following exposure to cannabis individuals homozygous for COMT valine allele tend to develop schizophreniform disorder, psychotic symptoms in adult life and the same is not observed in individuals homozygous for COMT methionine allele.

STRESSFULL LIFE EVENTS, EARLY CHILDHOOD TRAUMA:-

Psychotic illness in young adolescents tend to begin with a major stressful life event and tends to remit relapse, deteriorate based on the interaction of various factors including environment, genetic liability response to treatment. In those with early childhood trauma, the risk of psychotic experiences are increased.

PREMORBID INDICATORS :

Delays in attainment of development of milestones for pre schizophrenic children is seen in large birth cohorts. motor abnormalities tend to begin after 2 years. Receptive language abnormalities are prominent between the age of 5 to 15 years. Both these show a linear relation with age. These abnormalities are not only found in children who later develop schizophrenia at a later age but also their

relatives. The intelligence level of children is lesser than that of unaffected siblings which was prominent of schizophrenia than for bipolar disorder. Social anxiety, lone play, poor relationship resulting in a disturbed social maladjustment is seen in children who develop not only schizophrenia but also other psychotic disorders. Despite the low specificity developmental abnormalities can be used as a possible measurable indicator of genetic liability for schizophrenia.

CHILDHOOD PSYCHIATRIC DISORDERS:

A longitudinal study [27]of follow-up of representative birth cohorts of 1037 children with Vulnerable mental state was done in Newzeland. It had sequential assessment of childhood development abnormalities followed by serially collected, self reported psychopathology with further psychiatric interview carried out at ages 11 and 26. Child to adulthood continuity was seen for antisocial disorder, depression, anxiety. But no similar correlation was seen for schizophreniform disorder. Juvenile categorical diagnoses are demonstrably poor discriminators of adult psychiatric disorders at the present level of evidence.

SUB CLINICAL PSYCHOTIC EXPERIENCES :

In Dunedin multi disciplinary health and development study[27] self reported delusional beliefs and hallucinatory experiences at age 11 would predict schizophreniform psychotic disorder at 26 years. Based on psychotic experiences at age 11 three groups strong, intermediate group with weak symptoms and no symptom (control) group were studied. Odds ratio was 16.4 in the strong symptom group, 5.1 in the weak symptom group.

Schizophreniform disorder was diagnosed in 25% of former and 9.5% in the latter group at age 26 . Developmental motor, language, cognitive abnormalities were present in strong symptom group but the other group had no gross abnormalities . These may serve as an indicator of ongoing psychotic process . In Netherlands mental health survey and incidence study of subclinical psychotic experiences and follow up for 22year with assessment done at index , first year, second year. Those with subclinical psychotic experiences had greater risk (odds ratio of 65.1 and a positive predictive value of over two year was 8%) on combination with known risk factors Subclinical developmental psychotic experiences could become abnormally persistent. For onset of psychotic disorders. Increased

exposure to known risk factors at an early stage lead to increased rates of persistence of subclinical psychotic experiences and onset of psychotic disorders. This psychosis- proneness - persistence impairment model of psychosis offers an insight into the underlying mechanism for development of psychosis. Though positive predictive power of persistent subclinical symptoms is 40% it is still low to develop a useful screening tool with it[27].

CLINICAL VARIABLES IN FIRST EPISODE PSYCHOSIS

POSITIVE SYMPTOMS:

Delusion, hallucinations, distortion and exaggeration in language and communication, disorganized speech and behaviour, catatonic behaviour, agitation.

NEGATIVE SYMPTOMS:

Reduced speech, poor grooming, limited eye contact, reduced emotional responsiveness, reduced interest, reduced social desire.

AFFECTIVE SYMPTOMS:

Depressed mood, anxious mood, guilt, tension, irritability, worry.

AGGRESSIVE AND HOSTILE SYMPTOMS:

Hostility, verbal, physical abusiveness, assaultive , self injurious behaviour.

Positive symptoms, negative symptoms, aggressive symptoms though tend to commonly occur in schizophrenia their occurrence in other disorders is also observed, like bipolar disorder, schizoaffective disorder, psychotic depression, drug induced psychosis (O'Donnell[78]). Affective symptoms though predominantly seen in bipolar disorder, depressive disorder depressed mood, anxiety occurs invariably in schizophrenia. These symptoms arise due to malfunctioning in various circuits resulting in varying level of neuro transmitters also influencing each other.

POSITIVE SYMPTOMS -NEUROBIOLOGY

Hypo function of the NMDA receptor results in the release of GABAbergic inhibition over glutaminergic neurons leading to excessive glutamate mediated stimulation of dopaminergic neurons in the mesolimb ic pathway leading to positive symptoms.

NMDA receptor dysfunction in ventral hippocampus also leads to excessive activity of mesolimbic pathway resulting in dopamine excess. (Berman[81])

NEGATIVE SYMPTOMS NEUROBIOLOGY

over activity of the cortical pyramidal neurons in the brain stem following excess glutamate via the cortico striatal pathway subsequent to lack of inhibitory control of GABA, due to hypo function of NMDA receptors in GABA neurons leads to hypo activity of meso cortical pathway resulting in negative and cognitive symptoms. Mental illness are not only due to genes that are abnormal in their DNA and in the function of proteins they code but also to the normal genes that result in functioning proteins that are normal but are silenced or activated by the environment at wrong times. Dysconnetivity of neurons particularly at the hippocampus and prefrontal cortex especially at the glutamate synapses with NMDA receptors that become hypo functional .(Berman[81])

Environmental influence by

1. stress
2. traumatic experience
3. sleep deprivation
4. toxin
5. learning sensory experiences.

Cannabis use at an early age makes a favourable ground for the development of illness. Genes rather than coding for mental illness, code for DNA. Resulting in mRNA, for altered proteins with altered molecular abnormality in the neuro developmental process, including ;

1. synthesis
2. activity of enzymes
3. transporters
4. receptors
5. synaptic plastic machinery

6. components of signal transduction

7. other neuronal components

Subtle molecular abnormality may convey risk for the development of illness when combined with environmental factors resulting in mental illness.

REVIEW OF LITERATIURE

REVIEW OF LITERATIURE

Barnes et al[2] Poorer is the outcome in terms of medication and symptoms as longer the psychosis proceeds undetected, gradual worsening occurs in the untreated period. Long periods of social, psychological deterioration contributes to the morbid process which continues unchecked in the undetected ,untreated period. Medications when initiated early can ameliorate or hold a check on the deterioration process. Poor insight in to the illness, treatment refusal, subjective lack of distress to symptom behaviour also to social context adds to the pre morbid process, and delayed detection rates.

In this study of 52 patients there was no gross difference in mean age of onset of illness in long, short DUP group. They showed no evidence of worsening of negative symptoms, positive symptoms, deterioration of IQ as against shown by Loebel et al(1992),Crow et al(1986), Syzvarskiet et al (1955). But reported longer and lower level of remission in those with longer DUP. Rather than patient with short DUP those on longer DUP were older, however this did not reflect earlier age of onset in the latter group. This study found no relation between particular symptom profile and duration of onset of psychosis. Better IQ level were observed in those short DUP.

Laresn et al[1] observed that there was a gradual deterioration of all variables as the onset of psychosis approached .Also identified longitudinal patterns defined by varying starting level in childhood and differed in courses over the time of development. During childhood their social functioning was preserved, with a subgroup of children having impaired academic functioning at that stage itself. However as the age progressed marked deterioration in social function was noticed, also were detected to have lower age at admission, very few friends, had many negative symptoms.

There was no significant relation between the level of social functioning and baseline characteristics. Earlier the age of admission poorer the level of academic functioning with lesser years spent in education, other meaningful activity. Neuro regressive process which can be attributed to reduction in the cortical synaptic connectivity leads to decline in social, academic functioning in adolescence. There by gives us a view that heterogeneity of schizophrenia begins early even before the onset of psychosis. Bala Subramanian et al[3], In his study of 131 first episode psychiatric patients, full remission was less likely with longer DUP.

There was a gross difference in DUP of 55 weeks in between good outcome and poor outcome groups. Superior outcome in female was noticed in DOSMCD, other Indian, Nigerian studies, however in this study no gender difference was observed.

In the study by Amanda et al[4] involving 42 patients presenting for the first time, with psychotic features, those with longer DUP displayed a blunted coping style with protracted delay in seeking treatment. They also presented with more severe symptoms at the time of presentation to psychiatric services. They tend to experience lesser anxiety when experiencing an unavoidable stressor, they tend to cope better or do not respond to threatening information. This in turn leads to extended periods without seeking healthcare invariably ending in longer duration of untreated illness. When younger patients presents with psychotic symptoms, somatic symptoms like sleep disturbance ,decreased interest in daily routine they are likely to present to a general practioner. Involvement of general practioner in the referral pathway, better knowledge about identification of psychiatric symptoms would result in early referral of the patient to psychiatric services.

Cole et al, Burnett et al contact with primary care is an important factor in decreasing Duration of untreated psychosis. Verity et al[5] It is

difficult to calculate the Duration of untreated psychosis provided the difficulty in rating the onset of psychosis establishing criteria for the initiation of effective treatment. Intermittent nature of psychosis, difficulty in accuracy in recalling past clinical details, difference between individual observers. Altamura et al [28]Yet method for assessing DUP are not well stated or reliable reports not clearly established. In this review of 13 reports from various independent databases relation between DUP and time to remission of psychotic symptoms was studied.

Longer time to remission, lesser incidence of positive symptoms in the presence of longer DUP was indicated by 9 out of 13 reports which were also statistically significant with regard to relapse subsequent to attainment of remission. Atlamura et al found that those with short DUP were less likely to relapse. However Robinson et al. Linszen et al[29] which prospective studies did not find DUP to predict relapse. 4 reports Scully et al, Haas et al, Edward et al. Larsen et al have shown a significant relationship between DUP and negative symptoms. Inconsistent results were obtained on examining the relationship between social functioning and DUP.

Browne et al[30] Longer DUP is significantly associated with lower pre morbid adjustment. Presence of positive symptoms at the end of one year was predicted by DUP. Rather than the gender, pre morbid adjustment for the period previous to onset of illness including childhood, adolescence, early childhood, marital relations, general behaviour predicted the symptoms at the end of 1year after initiation of treatment.

Non affective psychosis had a poorer outcome than affective psychosis. Affective psychosis had better outcome than previously reported. Also ICD 10 diagnostic criteria have good predictive validity(swaran singh)[32].

In this study [6] 200 consecutive admission to first episode program with assessment of pre morbid function and on being followed up for 2 years longitudinally it shows that higher level of positive symptoms and poor social functioning was associated with longer DUP. In a systematic review[7] involving 10 studies,30% of patients with FEP disengage from treatment services and this is dependent on DUP, baseline symptom severity, substance abuse, dependence, insight, family members and relatives involved.

In this longitudinal 2 year follow up study [8] involving 423 patients , 48 weeks was the mean DUP of patients. It was inferred that more negative symptoms were independently associated with poorer pre morbid social adaptation. Also it was associated with smaller social network at entry and at 1year follow up. Impaired pre morbid school adaptation was independently associated with poor vocational outcome at 1year and 2year follow up.

In the meta analysis[9] better response to pharmacotherapy measured in terms of reduction in symptom severity ,positive symptoms (13 studies), global psychopathology (13 studies) was seen in those with shorter DUP. Wiersma et al[33,9] followed 81 patients over 180 months and came up with the observation that duration of untreated psychosis predicted the time to response for treatment. Robinson et al[34, 9] came up with similar report in a group of 118 patients followed for 1 year, a reduced chance to meet response criteria with longer duration of DUP. Further a hazard ratio would reduce by half if DUP were to be decreased by half was observed by Perkins et al[35,9] in 38 patients being followed for 24 weeks. Craig et al[36] reported no relationship between the duration of untreated psychosis and response categories. His study included149 patients and were followed for 24 months. In the study involving 24 patients being

studied for 12months Liberman et al[37,9] reported that odds of responding to treatment reduced by 15% with every year increase in the duration of untreated psychosis. There by decrease in the response rates for the longer DUP.

Malla et al[38,10] reported 85% remission rate among those with short DUP, where as there was 65%remission in those with longer DUP. Black et al[39] among 19 patients followed for duration of 6 months there was100% remission in those with short DUP, Where as there was only 50% remission in those with longer DUP. Among those with long DUP 13% continued to be continuously psychotic compared, to only 3 patients in shorter DUP were continuously psychotic. Also observed there was no difference with regard to treatment response in both group. Herber et al[10]complete remission of symptoms observed in a group of 759 patients of which only 491 completed study. Finally 76/273 patients accounting for 28% attained full remission in short DUP group where as only 14% 30/218 had full remission. Mean duration of untreated psychosis in first episode psychosis patients estimated by Larsen et al[1] in 43 patients was 61.7 weeks in responders group, but it was almost thrice i.e 180.5 weeks in non responders group.

Haas & Sweeney [11] Documentation of prevalence and severity of behavioural deficits that precede onset of psychotic symptoms could be of importance particularly it could be demonstrated that a wide range of behavioural deficits occur from early life before the prodromal and psychotic phases of illness based on the pre morbid adjustment scale. In this study including 71 hospitalized first episode patients with psychotic illness they were classified as deteriorating , good , chronically poor. Scores in the childhood varied with a mean of 0.34, in adolescence it was 0.37 , late adolescence it was 0.41. 74% of the patients did not experience their first psychotic symptoms until their age of 19, this group had a mean pre morbid adjustment score of 0.44.

Out of the entire population 39.4%, 39.4%, 21% were good, chronically poor, progressively declining pre morbid adjustment respectively. insidious decline was noted in 87% of males. Post hoc analysis showed that those with good adjustment in their pre morbid period were older at the time of first hospitalization and also had a later age at onset compared to the chronically poor pre morbid group. There by predicting later age of onset in good pre morbid functioning group.

There was no gross difference in the symptomatology measures at the time of admission, however difference was noted in negative symptoms score. More negative symptoms were seen in the insidious-decline group than in the group with chronically poor premorbid adjustment. Age of onset was almost equal among the diagnostic groups. Age had no influence over the symptom severity at the time of admission.

Age of onset was however associated with the measures of pre morbid adjustment . Age of onset of symptoms was negatively correlated with pre morbid adjustment in early adolescence. Better the level of economic independence, later was the late age of onset. The group with short duration of hospitalization since the onset had younger age at the time of onset than those with long duration of symptoms. Those in the long duration of symptoms group had better global functioning at the time of admission to hospital. when correlation was done between pre morbid adjustment pattern and duration of symptoms it was inferred that the two variables were not significantly correlated.

Those with chronically poor and good pre morbid adjustment were equally distributed between the long duration of symptom group and short duration of symptom group, where as those with insidious

decline were almost in the long term symptom group. Substantial variability is observed in the age of onset, level of pre morbid adjustment, time from beginning of first psychotic symptoms to first medical or Psychiatric intervention.

Wyatt[40] males have a progressive decline in pre morbid functioning than females with insidious onset. However positive correlation was observed between age of onset and the level of pre morbid adjustment when considered for the entire period. this shows that those with restricted social and academic competence during the early phase of adolescence have the risk of early onset of illness. When age is compared between chronically poor adjustment and good adjustment they differed by a span of 6.7 years. This indicates a better scholastic and employment, social functioning. The extent of severity of symptoms was found to be equal in both the group .This is against the expectation that positive symptoms tend to be more in the short duration group and this reflects the variance in the evolving psychotic disorder. Also individual tolerance of symptoms ,neglect of symptoms by family, social stigma play a role .Presence of good global functioning at the time of admission has a role to play in the tolerance of symptoms, delay in seeking medical intervention.

Leslie Philips[41, 42] more mature is the pre morbid personality there is only a minimal change in close, emotional , mature relationship. Good pre morbid adjustment is associated with attainment of age specific social, academic, occupational development with good prognosis at the presentation and also later stages.

Levitt et el[12] Poor pre morbid adjustment could be conceived as a psychosocial expression of the developmental brain pathology which precedes the onset of psychosis . In this case - control study of 12 schizophrenic patients with 12 age matched controls with observation using multiple perspectives like pre morbid adjustment scores using informant, subject, combined sources revealed a poorer adjustment in patients pre morbidly than in normal controls. Also change in pre morbid adjustment was noticed since the adolescent age group. Worse pre morbid adjustment correlated with worse present over all state. Independent living was also only to a lesser extent in them. Rather than positive symptoms more current negative symptoms were present. Duration of untreated psychosis has attained its importance in treatment and research of schizophrenia because of the fact that the Duration of untreated psychosis which lasts more than a year, which is a major public health problem also. Duration of untreated psychosis

is associated with chronically long course and both tend to be a poor prognostic factor (T. H. McGlashan[13]). In schizophrenia pathogenic process tend to be longer even before the onset of positive symptoms, than as a process it should be taken as a reflection of process. It should be considered as a marker rather as a determinant.

TIPS study [14] The median Duration of untreated psychosis in the early detection sectors was 1 month as against 3 months in the non early detection sectors also the age of onset in these sectors were recorded to be 21 years in early detection sector as against 26 year in the other sector. Duration of five years differed among the sectors. clinical symptoms in the former group were also benign when compared to the latter group. Early identification of the evident positive symptoms were taken care of in the similar way negative symptoms which tend to have a more prodromal course also has to be taken care of. Mayerhoff et al[43], patients with paranoid subtype of schizophrenia have better pre morbid functioning compared to patients with non paranoid subtypes. Mukherjee et al worsening in pre morbid functioning between childhood and adulthood has been associated with negative or deficit state syndrome.

In this study[15] involving 118 patients pre morbid adjustment score was done for 111. Mean age of the individuals was 25 years. First presentation of the psychotic symptoms was at 23.9 years. Most of them belonged to the middle class. There was a reduction in the sample size as the age progressed. co-efficient in developmental stage were all positive indicating a worsening pre morbid adjustment in mean pre morbid adjustment score and five components of pre morbid adjustment scale.

Pre morbid behaviour ranged from normal to moderately withdrawn, fair adaptation in school, deviant friendship patterns. In adolescence the pre morbid behaviour ranged from normal to moderately withdrawn. However adolescents had better socio sexual functioning during early adolescence . There was a reversal in this domain in adults especially among males three times greater than in females. The deficit stage had consistently poorer scores in the pre morbid adjustment scores. Negative symptom scale showed positive correlation with mean PAS during childhood and early adolescence.

When individual items were examined sociability and withdrawal scores were poor. Long duration of psychosis was negatively associated with mean pre morbid adjustment scores from

late adolescence. Lower global assessment of functioning was negatively associated early adolescence pre morbid adjustment score. Females had a better treatment response. Poor sociability and withdrawal during early adolescence predicted poorer treatment response. Based on the reduction in the pre morbid adjustment scores they were classified as deteriorating, stable poor stable good group. 72% , 51% , 39.5% were respectively present in each group.

Those in the deteriorating and stable poor group had early onset of illness. There was no relation observed with the symptom profile. Remission was better 85% among stable good group where as it was only 65% among other two groups. The correlation of the sociability and withdrawal indicates that it may be an early marker for severe and complicated form of schizophrenia. However these do not add to the predictive value to the treatment response.

Rather than a gross deterioration, a stable but poor pre morbid functioning was noted in 25% of the patients indicating a period which is likely to be missed out by the individuals nearer to the patient.

Larsen TK[16] The total scores of the pre morbid functioning though show minimal deterioration the individual constraints have gradual deterioration as it is expressed as an estimate of best functioning of all developmental stages. Males tend to score poorly in the work , school functioning, school changes job changes, energy level**.** Deterioration in the pre morbid adjustment score reaches a significance on reaching the adulthood developmental period. Gross change in the pre morbid adjustment score was observed between the late adolescence and adult hood. Further the change was significant among males. Correlation was observed between stable good females and deteriorating males and long duration of untreated psychosis. But both were not significant. change in pre morbid adjustment scores were seen not to be consistently related to age at onset with two exceptions that decrease in functioning was noted between early and late adolescence in males, where as in females it was noted in childhood, early adolescence.

Insidious onset of psychosis was associated with a poor pre morbid adjustment. When the index symptoms at the time of hospitalization were studied it showed no correlation of pre morbid adjustment score with general, negative, positive scale scores in

females. As regards with males all three symptoms showed a correlation with the pre morbid adjustment score.

The deterioration in females seem to be rapid where as those in male appears to be insidious this is also reflected in the treatment response. Similar to schizophrenia early course of schizophrenia is also heterogeneous that the pre morbid patterns do not lend themselves to easy generalization. The huge slide in the pre morbid functioning which may be either acute or insidious leads us to the fact that there is an active pre morbid process which is progressing despite absence of clinical symptom eventually ending in the onset of illness.

It may be either due to neurotoxicity resulting in actively symptomatic state or may be due to the deficit process which actively drives through the deterioration this has to be studied in future.

Malla et al[17] In a large sample of First Episode Psychosis patients followed for 1 year, persistent negative symptoms were observed for 23% at the end of 1 Year. They had lower levels of cognitive functioning in all domains, longer duration for the

initiation of treatment, poor pre morbid adjustment, persistent negative symptoms, blunted affect at initial evaluation . Edward et al[44] negative symptoms during First Episode Psychosis are unstable. Enduring negative symptoms are related to long duration of untreated psychosis . Those who later meet the criteria for deficit syndrome they are similar to those with persistent negative symptoms. These illness have to be intervened at an early stage.

Yung et al[18] Non specific changes in behaviour, emotion precede the psychotic symptoms in schizophrenia spectrum disorder. Non specific symptoms like apathy, suspiciousness, impaired motivation , sleep disturbance, irritability, anxiety, depressed mood. Gourzis et al[45] Eight symptoms were reported in study of 100 schizophrenia patients with first presentation in comparison with 100 age matched controls. Rather than being called as a prodrome these can be called as a prodromal symptoms retrospectively if people with the above symptoms land up with the psychotic illness. Extrapolation of these signs during the pre psychotic phase plays a pivotal role in planning preventive strategies. During this phase the magnitude of problem measured by them should be strong enough so that prevention strategies planned would be effective in the

prognosis of the illness. Norman et al[46] reports a 5- factor structure for pre psychotic symptoms based on the principal component factor analysis. Impaired role functioning, decreased energy, social withdrawal were related to high scores in negative symptoms at the presentation of first episode psychosis. This continuity between the symptoms and deficits show that impairment begins at an early date itself before the onset of symptoms. Despite the differences in the methodology , stage of the illness at the time of assessment gives strength to the above said association. Although particular signs have varying specificity, each should also be ascertained exactly.

Cornblatt et al[19] Poor premorid adjustment during childhood in social and academic dimensions in comparison with non psychiatric controls has been considered supportive of neuro developmental model of schizophrenia . Rabinowitz et al[47] observed in first episode schizophrenia lower scores in negative symptoms and general psychopathology were present in those with stable pre morbid adjustment, where as for those with higher negative symptoms and general psychopathology symptoms the pre morbid scores were lower.

Norman et al[48] in 113 patients with first episode of schizophrenia observed, 75% with medication for less than a month had a higher rating in the psychomotor poverty dimension at first assessment as well as at 1 year . They had poor function on most cognitive domains . Pre morbid schedule done for 94 first episode patients reported negative symptom dimension to be associated with higher scores on schizoid, passive dependent, schizotypal personality dimensions. Association was observed between schizotypy and positive symptom dimension. Though this study differs in methodology, schizoid dimensions incorporates behaviour patterns that would be rated as poor social adjustment on the pre morbid adjustment scores.

Although negative symptoms and cognition are moderately correlated, they have different variables and constructs and hence represent different neural pathways . Negative symptoms are seen more in patients with continuous poor social adjustment in adolescence. Poor cognitive function presents with low academic function in childhood and adolescence.

These groups indicates that there are a group of people with consistent deterioration in the earlier part of life itself . Those with sudden onset of symptoms with rapid appearance of positive and negative symptoms form another group where in the neuro degeneration begins just before the onset of psychosis . Most study samples includes a large number of male rather than female patients.

Carpenter et al[49] females tend to present with greater level of dysphoric, affective symptoms .In this follow up study[20] of adolescents into adulthood low consistency was seen with schizoaffective disorder. Schizophrenia and affective psychosis had better diagnostic stability. Diagnostic instability may be explained by the greater prevalence of behavioural problems and affective symptoms in adolescence. It was found that 40.4% patients had their onset of psychosis between the age of 15 and 19, in this study of 201 subjects of age group 19-30. Those with adolescent onset had a significantly longer duration of untreated psychosis with worse score on pre morbid adjustment scale and higher level of affective flattening and bizarre behaviour, high frequency of negative symptoms. Presence of first rank symptoms is associated with a younger age of onset with no specificity for diagnosis of schizophrenia.

Persistent voices heard in childhood may continue or abate. In the subset of patients where this continues, it is found to be associated with greater severity of voices, lack o f triggers and a higher level of anxiety and depression. Such patients are also found to be at greater risk of future psychotic disorders if other risk factors are present, as shown by prospective studies in children.

Ballageer et al[50] on comparison with adolescent (15-18) onset and adult (19 to30) onset, a higher level of negative symptoms was seen in the former group. The duration of untreated psychosis was also significantly longer for this group. Apathy and anhedonia were more common , had significant relationship among negative symptoms. But alogia and affective flattening had no relationship with duration of untreated psychosis the presence of apathy and anhedonia also correlated with the presence of psychotic symptoms. But alogia, affective flattening had no correlation. Acute onset of psychosis was associated with shorter duration of untreated psychosis . Substance abusing patients presenting for the first time with psychotic features had thought disturbance better pre morbid adjustment higher cognitive functioning, antisocial behaviour. Addington et al[16] 28out of 76 were unemployed or discontinued school at the entry, were followed up for 12 months and found

23/76 to be unemployed at the end of 12 months . Only 5 out of the initial 28 became employed or continued their education.

Tirupathi et el reported a gain of 14% employment over a period of one year who were not on treatment for many years but now were initiated on treatment. Stirling et al[51] reported Negative symptoms were modestly associated with occupational impairment but strongly to financial dependence, impairment in household duties .Positive symptoms were related to financial dependence only. Relation was found between positive, negative symptoms and quality of life scale. When compared in patients with DUP less than five years and DUP more than five years the former group had better employment. Occupational outcome may be related to long term trait, Characteristics also sustained impairment associated with psychotic disorders. Impact of stigma on employment remains largely unexplored.

Ho et al[51] robust relationship exists between negative symptoms at admission , with impairment in social relationship with friends and enjoyment of recreational activities at two year follow up, independent of any relationship with pre morbid adjustment . Linzen et al[2] significant amount of dependence on parents during five - year follow – up and is related to longer duration of untreated

psychosis . Harrington et al[53] independent significant contributions on fundamental outcome score are made by diagnosis, gender, pre morbid adjustment, duration of prodromal period in 76% of first episode psychosis patients who belonged to non affective psychosis . Thus community and social functioning is influenced by pre morbid adjustment as well as illness and treatment.

In comparison between 76 patients and 76 sex matched controls no gross difference was seen in the childhood, early adolescence score. only during subsequent periods the pre morbid adjustment score started increasing. ANOVA done with the scores in 5 dimensions of pre morbid adjustment scores showed an overall significant and a insignificant linear trend on all five dimensions measured. comparison of late adolescence score was 0.24 in patients versus 0.17 in controls, adulthood score was 0.24 in patients versus 0.12 in controls.

As with other studies females were found to have better pre morbid functioning than males. symptoms examination revealed significant difference in the positive, negative, general psychopathology scale. Significant differences were observed in the

6 of 9 cognitive domains with the stable poor group performing more poorly in three domains followed by deteriorating group and a fair performance by the stable good group.

In individuals diagnosed with psychosis deviations in functioning particularly social adjustment is present in many but not all even before the illness is diagnosed. Mostly manifest as poor interpersonal relationship, eccentricity, withdrawal behaviour impairment in scholastic performance, shyness among peers, isolation occurring suddenly in an adolescent are manifestations of prodrome of psychosis. 15% subjects showed a clear transition from a high to lower level of social functioning.

An early path physiological process that manifest as poor social adjustment subsequent to the accumulating genetic, environment risk factors consistent with the multiple hit hypothesis lead to the premorbid manifestations and a gene or an environmental insult occurring in the later life may be necessary for the full syndrome of schizophrenia to develop. [55] A longer duration of untreated psychosis was associated with a significantly poorer functional and symptomatic outcome four years later.

AIM AND OBJECTIVE

AIMS AND OBJECTIVES:

AIM:

The aim of the study is to assess Premorbid adjustment and clinical variables in First episode psychosis patients.

OBJECTIVES:

1. To estimate association between pre morbid adjustment score(PAS) and duration of untreated psychosis (DUP)in first episode psychosis patients.

2. To estimate association between pre morbid adjustment score and positive and negative syndrome scale(PANSS) score

3. To estimate association between age, age of onset of psychosis, residence, marital status, education, occupation and PAS, DUP.

HYPOTHESIS:

No association exists between pre morbid adjustment score(PAS) and duration of untreated psychosis (DUP).

MATERIALS AND METHODS

SAMPLE OF THE STUDY:

The sample comprised 95 consecutive drug naïve first episode psychosis patients who attended the psychiatry OPD. Out of them 71 completed the study and were considered for further analysis.

STUDY PLACE:

Data was collected from patients, reliable informant at Department of Psychiatry, Medical College hospital. The study was done from July 2014 to September 2014. The inclusion and exclusion criteria of study were as follows.

INCLUSION CRITERIA:

1. Patients presenting with First Episode Psychosis conforming to ICD-10 codes F20-29 and F30-33

2. Patients in the age group of 18 yrs to 65yrs

3. Patients providing informed consent or relative /friend if the patient is unable due to illness.

EXCLUSION CRITERIA:

1. history of or current medical illness that may significantly influence CNS function or structure (mental retardation, seizure disorder, significant head injury)judged by clinical evidence.
2. co-morbidity for psychoactive substance dependence as per ICD-10 diagnostic guidelines.
3. contact with psychiatric services for psychotic symptoms.

DURATON OF UNTREATED PSYCHOSIS:

The term was defined as the interval between first noted psychotic symptom(s) and contact with mental health services.(Morgan[57]). As described by the previous studies DUP was divided into 3 categories brief (less than 1 month) moderate (>1month up to 6 months) long (more than 6 months). (Craig [36]).

INSTRUMENTS:

1. Socio Demographic Proforma And Other Clinical Details
2. Mini International Neuropsychiatric Interview
3. Premorbid Adjustment Scale
4. Positive And Negative Syndrome Scale

SOCIO DEMOGRAPHIC PROFORMA AND OTHER CLINICAL DETAILS :-

Semi structured Proforma:

The proforma was used to collect socio demographic and illness related information.details of each patient like name, age, sex, residence, socioeconomic status, marital status, past history, family history, pathway to care seeking, etc was collected with specifically designated proforma.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW:

MINI is a short structured diagnostic interview developed jointly by clinicians and psychiatrists in the united states and Europe for DSM-IV and ICD-10 psychiatric disorders . Administration time is roughly around 15 minutes, it was designed to meet the need for a short but accurate structured psychiatric interview for multicenter clinical trails and studies and is to be used as a first step in outcome tracking in non research clinical settings.

POSITIVE AND NEGATIVE SYNDROME SCALE

It is a 30-item 7-point (1–7) rating scale [56]. It is a comprehensive and thoroughly standardized scale to assess psychopathology in schizophrenia .It derives from a behavioural information plus a 35 to 45 minute clinical interview. It is administered as clinical interview over ½-an hour, behavioural

information is obtained . It has been standardised to assess the psychopathology in schizophrenia. The items in the table are precisely defined also the numerical ratings of each of them. It includes positive subscale, negative subscale and general psychopathology sub-scales. The subscale scores are found to be independent of each other.

The scale is sensitive and specific when treatment is initiated and the scale is administered at a later date. Its validity has been established by classification of patients according to the predominant symptoms present. Though the subscale score are associated with cognitive, treatment, clinical variables, pre morbid adjustment but not with outcome. The PANSS scores of patients is seen to be consistent over the illness course, one of its major strength.

When PANSS is administered in the absence of any gross psychopathology he is likely to get a score of 30 . This is one feature of PANSS which is potentially confusing. Reduction of PANSS scale scores with initiation of treatment indicates a treatment response . A sustained reduction of 20to 40% over a period of 6 months indicates remission of the illness.

PREMORBID ADJUSTMENT SCALE:

The Premorbid Adjustment Scale(PAS)[22] is designed to evaluate the extent of attainment of developmental goals at each of several periods of a subject's life before the onset of schizophrenia**.** It measures the level of

functioning in major domains of a person in different periods of life ability to socialise , make , establish and sustain relationships, ability to form intimate relations , maintain a successful occupational life out of the family. Items indicating functioning are evaluated at appropriate ages and are repeated for each period of the subject's life.

The four life period section are as follows:

1. up to 11 years -- Childhood
2. 12-15years - - Early Adolescence
3. 16-18 years -- Late Adolescence
4. 19 year and beyond – Adulthood
5. Marriage and General section

The last section about the general functioning of the person gives us an idea about the highest level of functioning and performance a person has reached prior to the onset of illness.

SOCIAL DIMENSION[1] includes Childhood, Early Adolescence, Late Adolescence, adulthood.

ACADEMIC DIMENSION[1] includes Childhood, Early Adolescence, Late Adolescence

The items in the premorbid adjustment scale are derived and modified from Elgin scale, Philips scale, premorbid social adjustment scale. These items having chosen from these sources based on the suitability of each item to different periods of development of the person also their ability to assess the subjects development over different periods.

The scale measures the functioning of the subject in the PREMORBID period which is defined as the period which ends 1 year before the onset of clinically noticeable symptoms. The symptoms include abnormal thought process like delusion, disturbances in the form of thought, disturbances in perception, irrational behaviour which are not due to any organic pathology. Each scale is scored between "0" and "6", "0" indicating a hypothetically healthiest end "6" indicating a least healthy end of the premorbid adjustment. ratings are based on the information provided by the subject, informant, hospital , school records of the patient.

Descriptive phrases serve as rough anchor points. The rater selects the number that corresponds most closely to the descriptive phrase nearest to it. Not every aspect included in a descriptive phrase is necessary for the rating. The ratings received for each item in a section are summed and expressed as total score divided by the possible score. The score is calculated by dividing the scores obtained by the highest possible score of the completed items. When it is not possible to score an item due to unavailability of information it is not included in the highest possible score. Average score of the pre morbid adjustment scale is obtained by the average of subscale scores.

PROCEDURE:

This study was conducted after getting approval from institutional ethical committee. Patients who attended psychiatry OPD were recruited for study on basis of inclusion criteria. Informed consent was taken after explaining the nature of study to patients and informant. Using Mini International Neuropsychiatric Inventory for significant psychiatric morbidity patients were initially screened and diagnosis was made using I.C.D-10 diagnostic criteria F20-29 and F30-33 . Then semi structured proforma was administered to collect socio demographic and illness related information. Pre morbid adjustment scale and Positive and negative syndrome scale were administered for all patients. Patient were treated with medications based on the diagnosis. After 12 weeks patients were again assessed using Positive and Negative Syndrome Scale.

ANALYSIS:

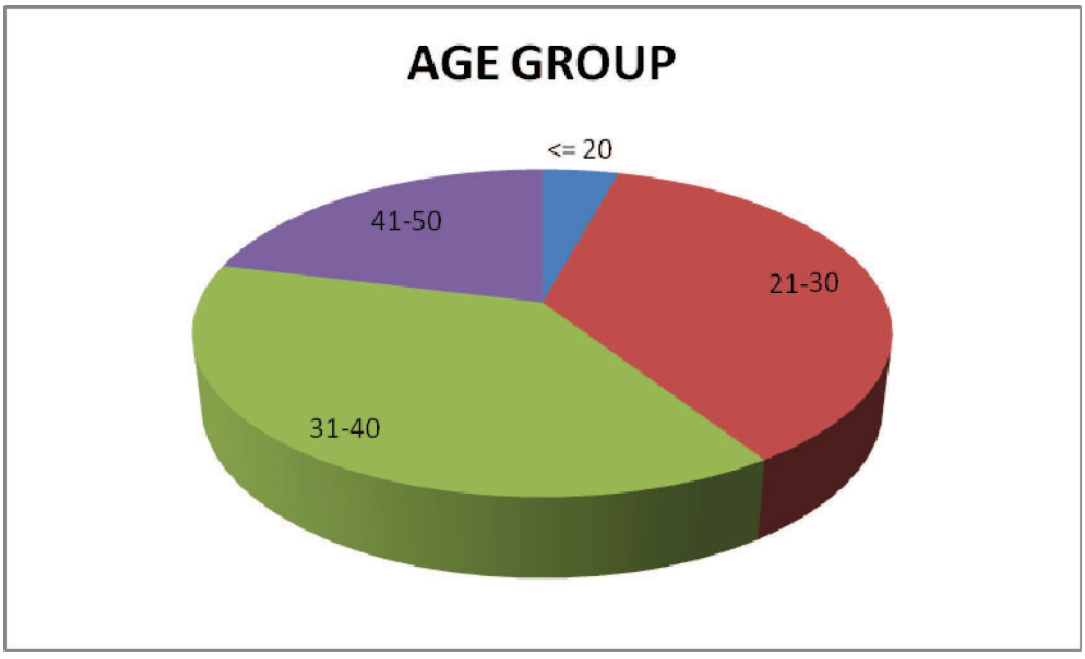
The collected data were analysed after entering the data into a Statistical package, Statistical Package for Social Sciences (SPSS) version 16.0.Data distributions were analyzed by using descriptive statistics such as Frequencies, means, and standard deviation. Parametric statistics such as "t" Test was used to find out the relationship between many variables. Non Parametric chi-square test was also used to find significant association. P value < 0.05 was taken for significant association.

OBSERVATIONS AND RESULTS

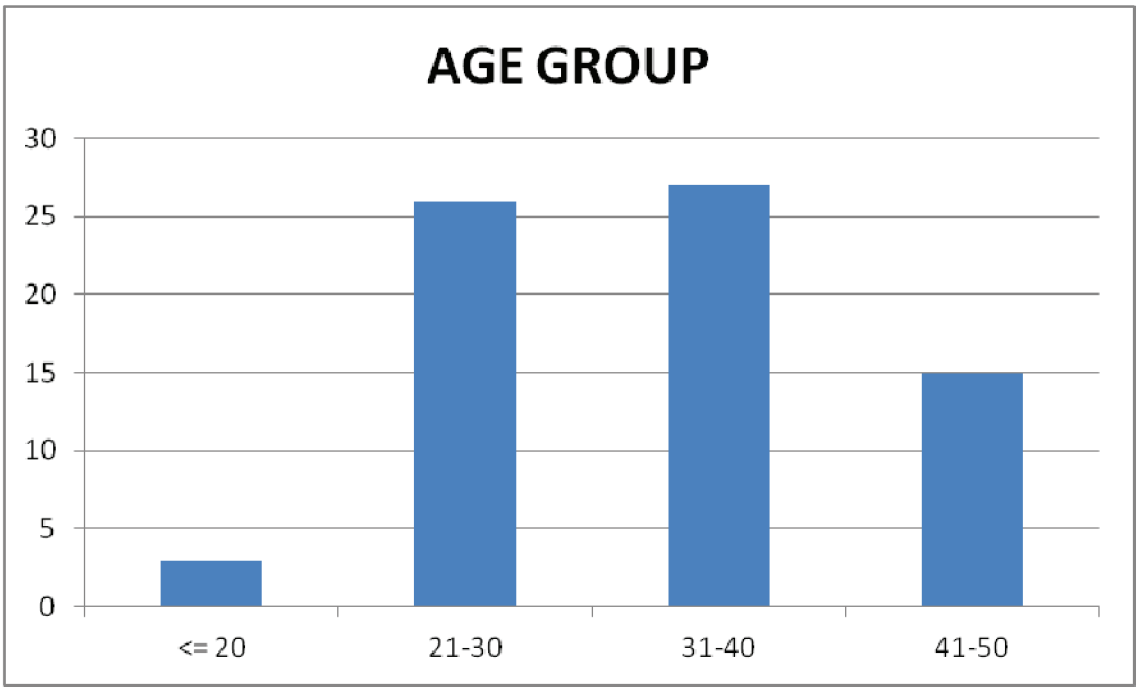
TABLE-1

Age Group	Frequency	Percent
<= 20	3	4.2
21-30	26	36.6
31-40	27	38.0
41-50	15	21.1
Total	71	100.0

GRAPH-1A



GRAPH-1B

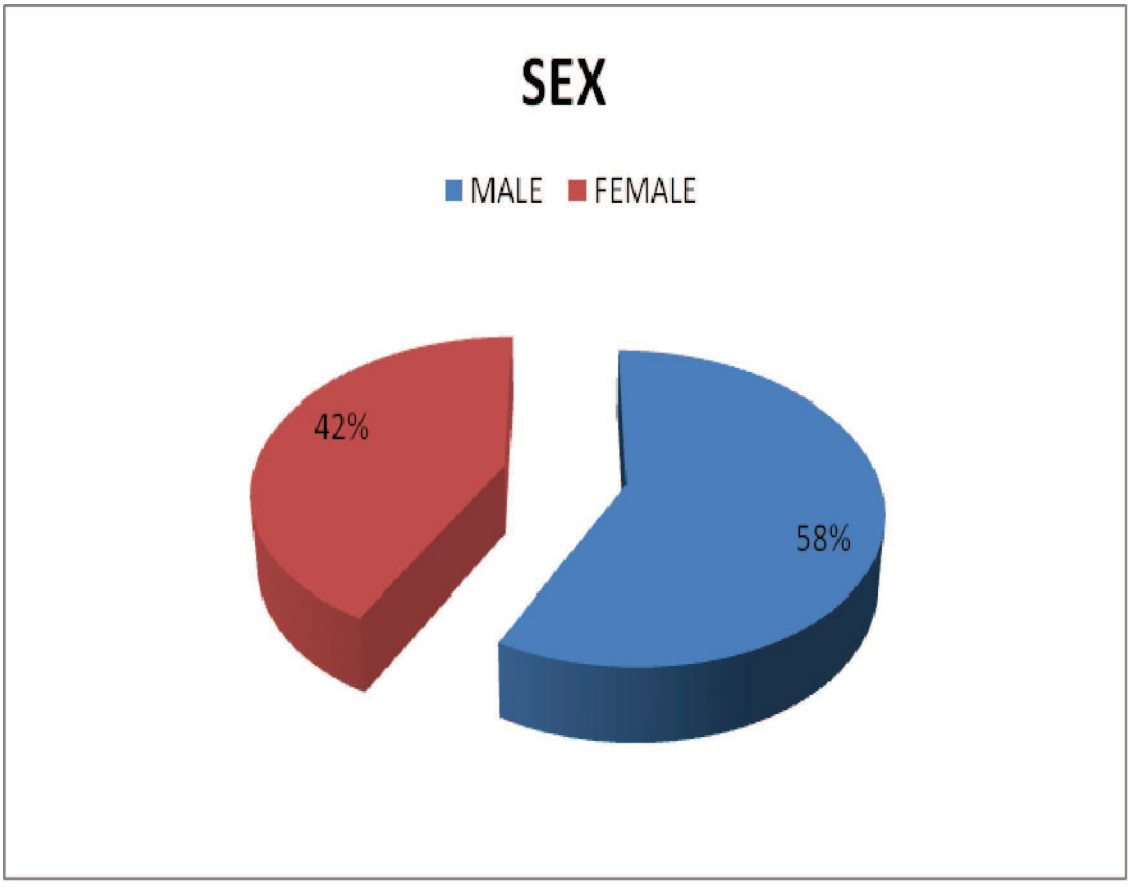


1. Among the 71 Patients 27(38%) belonged to 31 - 40 age group , 26(37%) belonged to 21-40 age group , both constituting 75 % .
2. 15 (21.1%) belonged to 41-50 age group
3. Only 3 (4.2%) were less than 20years

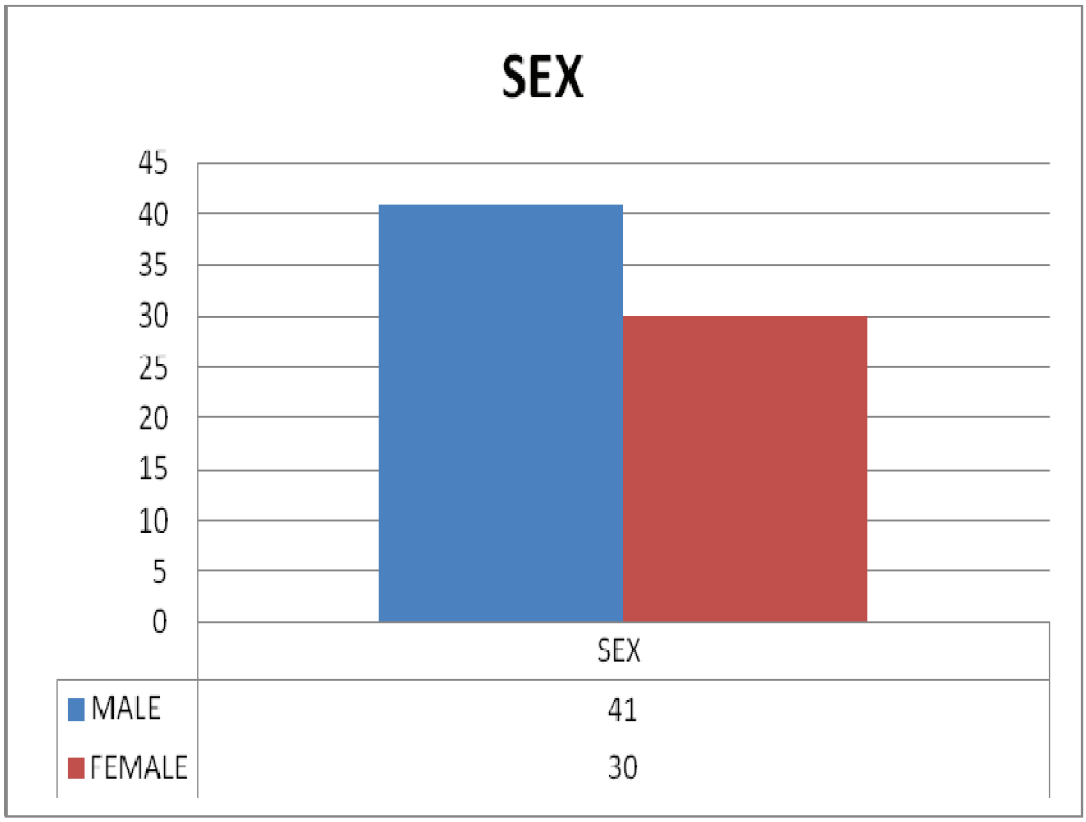
TABLE-2

Sex	Frequency	Percent
Male	41	57.7
Female	30	42.3
Total	71	100.0

GRAPH-2A



GRAPH-2B



Among the 71 patients 41 were males , 30 were females .

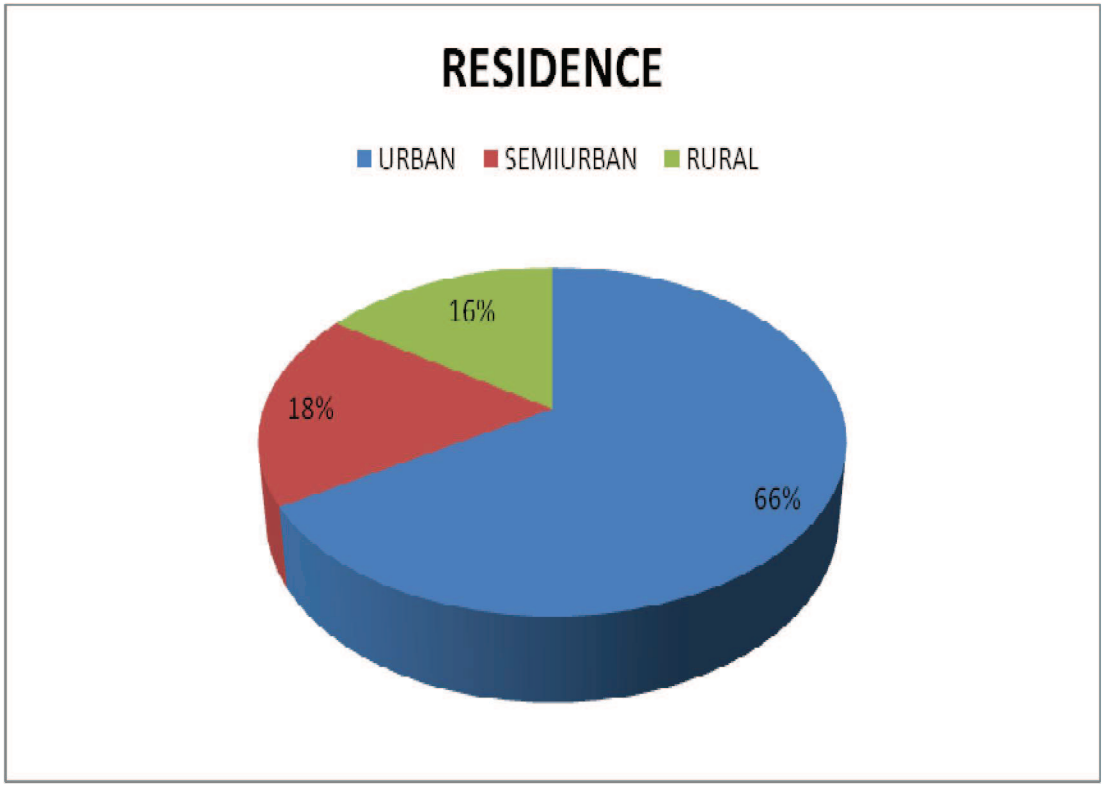
Males constituted 58%

Females constituted 42%

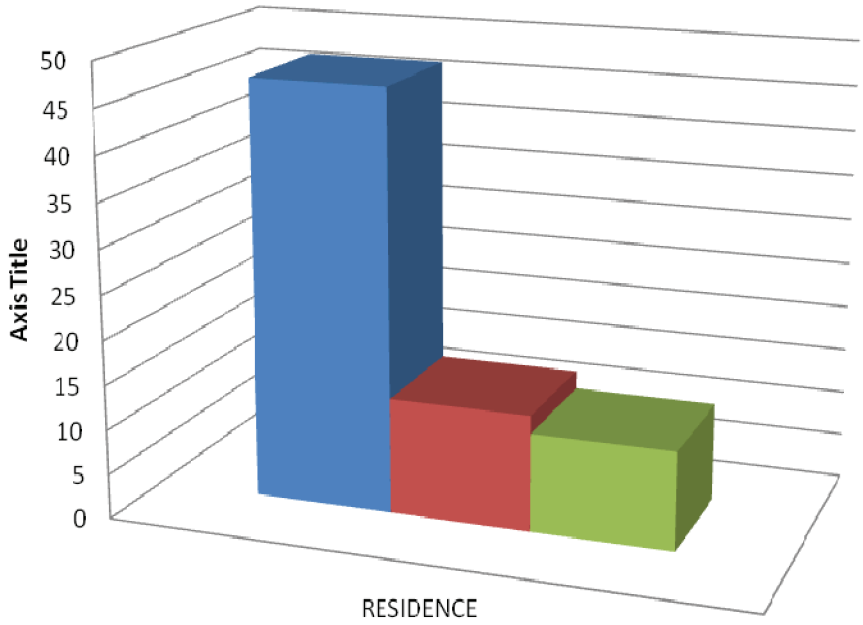
TABLE-3

Residence	Frequency	Percent
Urban	47	66.2
Semiurban	13	18.3
Rural	11	15.5
Total	71	100.0

GRAPH-3A



GRAPH-3B



	RESIDENCE
URBAN	47
SEMIURBAN	13
RURAL	11

1. 47 patients came from urban areas

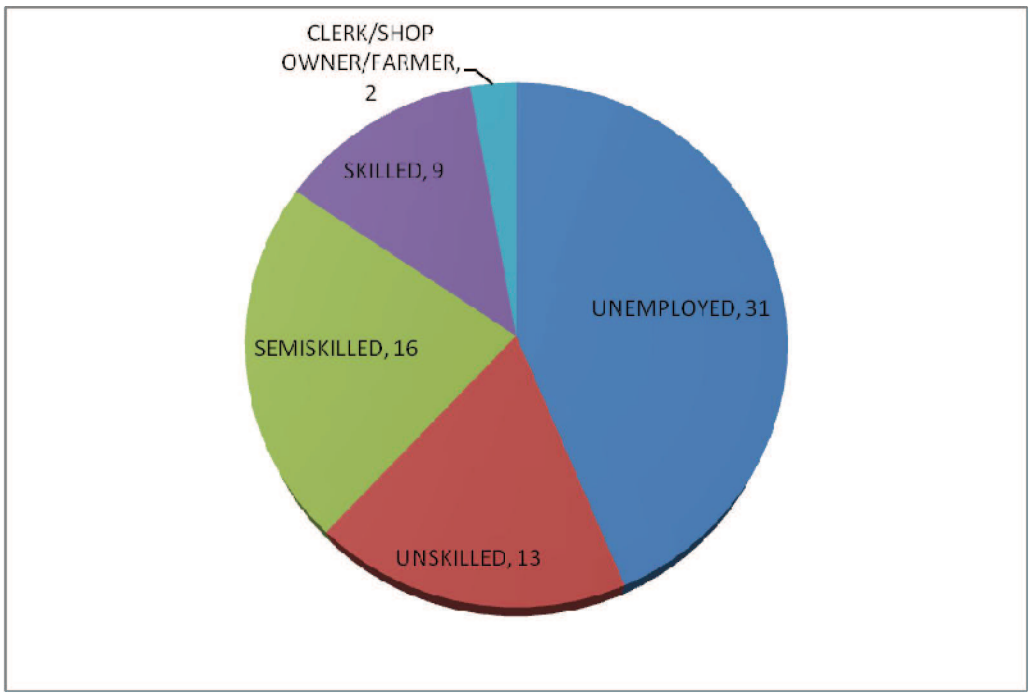
2. 13 patients from semi urban

3. 11 patients from rural areas

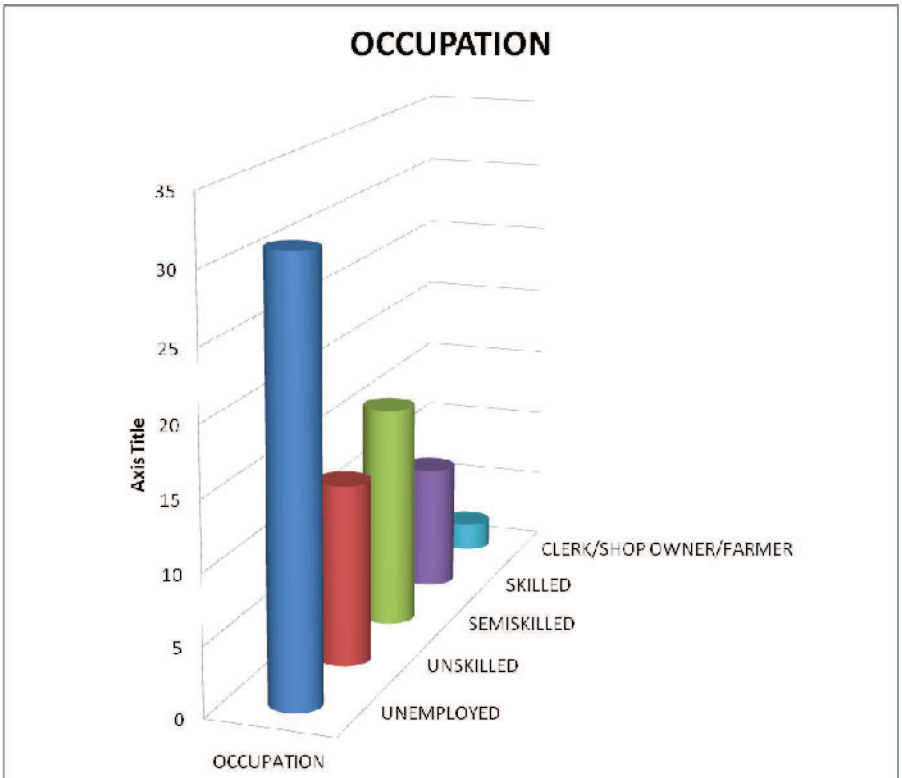
TABLE-4

Occupation	Frequency	Percent
Unemployed	31	43.7
Unskilled	13	18.3
Semiskilled	16	22.5
Skilled	9	12.7
Clerk/shop owner/farmer	2	2.8
Total	71	100.0

GRAPH-4A



GRAPH-4B



	OCCUPATION
UNEMPLOYED	31
UNSKILLED	13
SEMISKILLED	16
SKILLED	9
CLERK/SHOP OWNER/FARMER	2

1. 43.7% were unemployed .

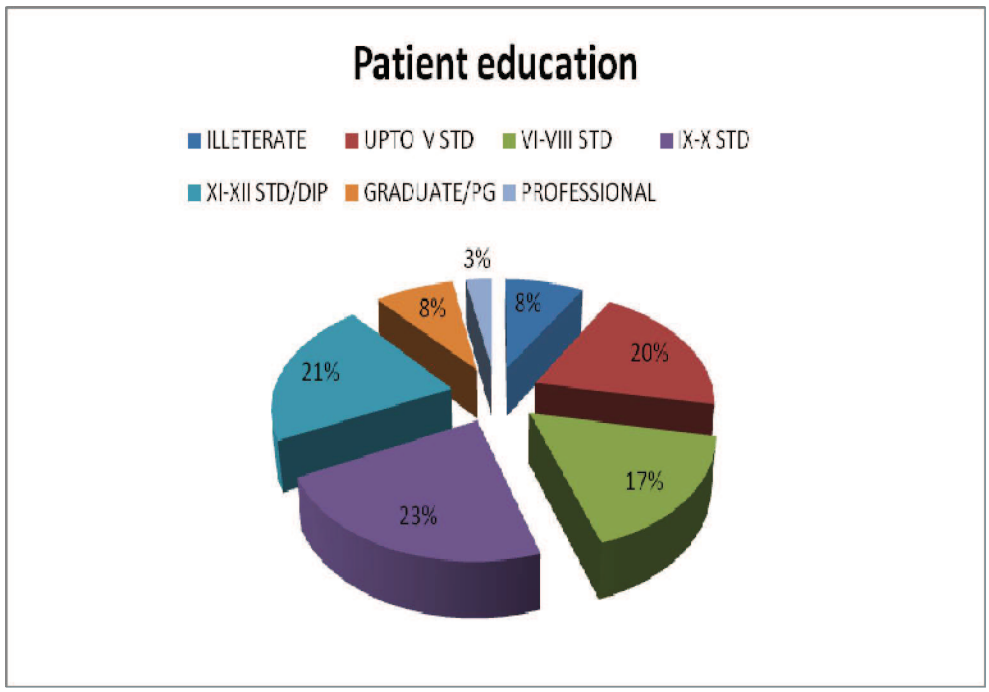
2. 18.3% were unskilled labourers 22.5 % were semi skilled .

3. Only 12.7% were skilled labourers.

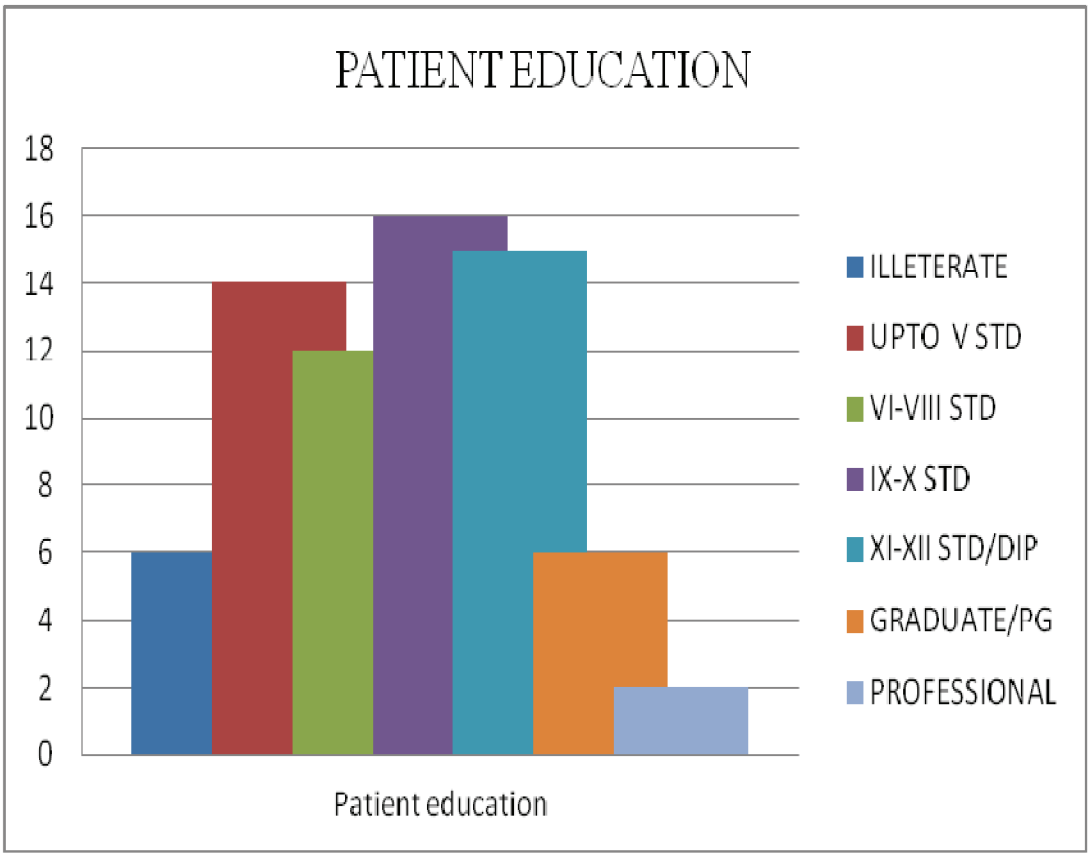
TABLE-5

Patient education	Frequency	Percent
Illeterate	6	8.5
Upto V std	14	19.7
VI-VIII std	12	16.9
IX-X std	16	22.5
XI-XII std/dip	15	21.1
Graduate/pg	6	8.5
Professional	2	2.8
Total	71	100.0

GRAPH-5A



GRAPH-5B



22.5% of the patients had education up to high school level

21.1%of the patients had education up to higher secondary level

19.7% of the patients had only primary school education

16.9% of the patients had education of VI to VIII std

8.5% were illiterates

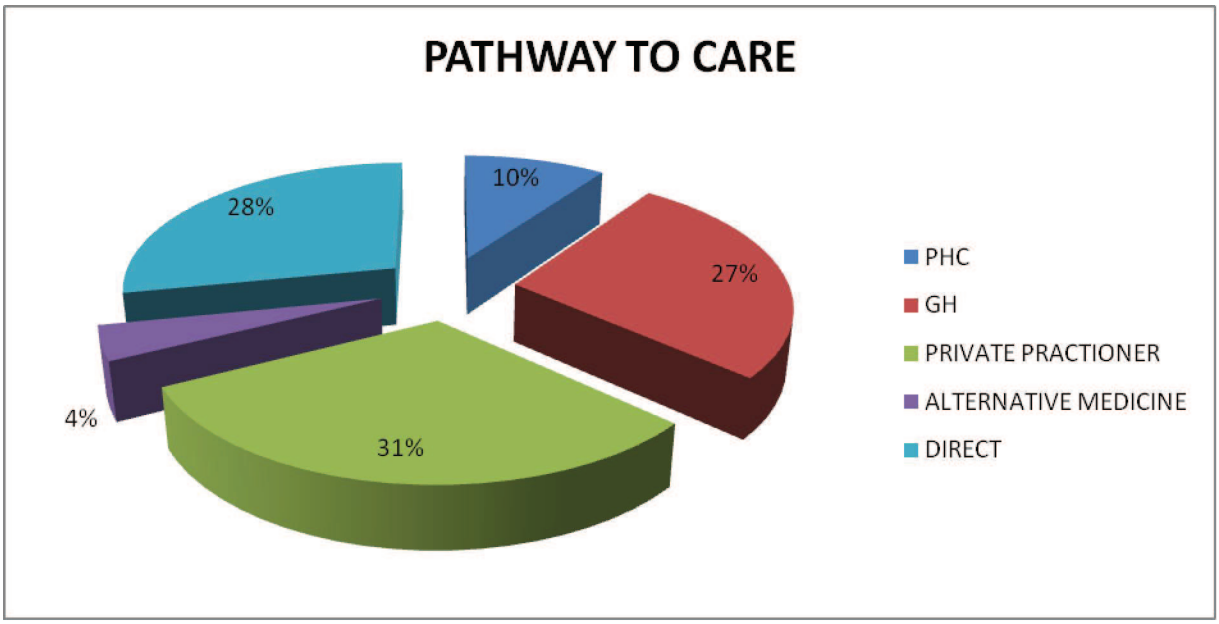
8.5% graduated

2% were professionals

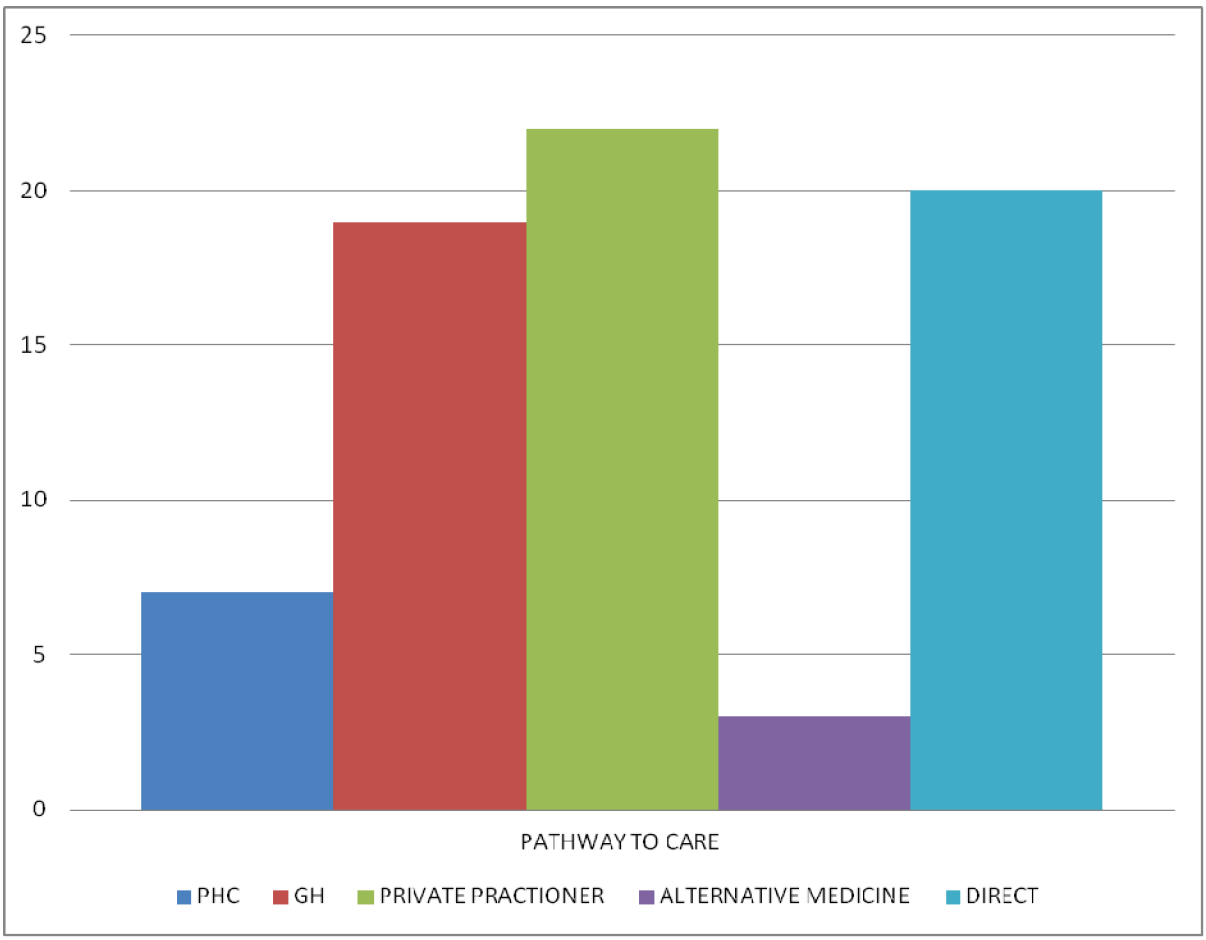
TABLE-6

Pathway to care	Frequency	Percent
PHC	7	9.9
GH	19	26.8
Private practioner	22	31.0
Alternative medicine	3	4.2
Direct	20	28.2
TOTAL	71	100.0

GRAPH-6A



GRAPH-6B

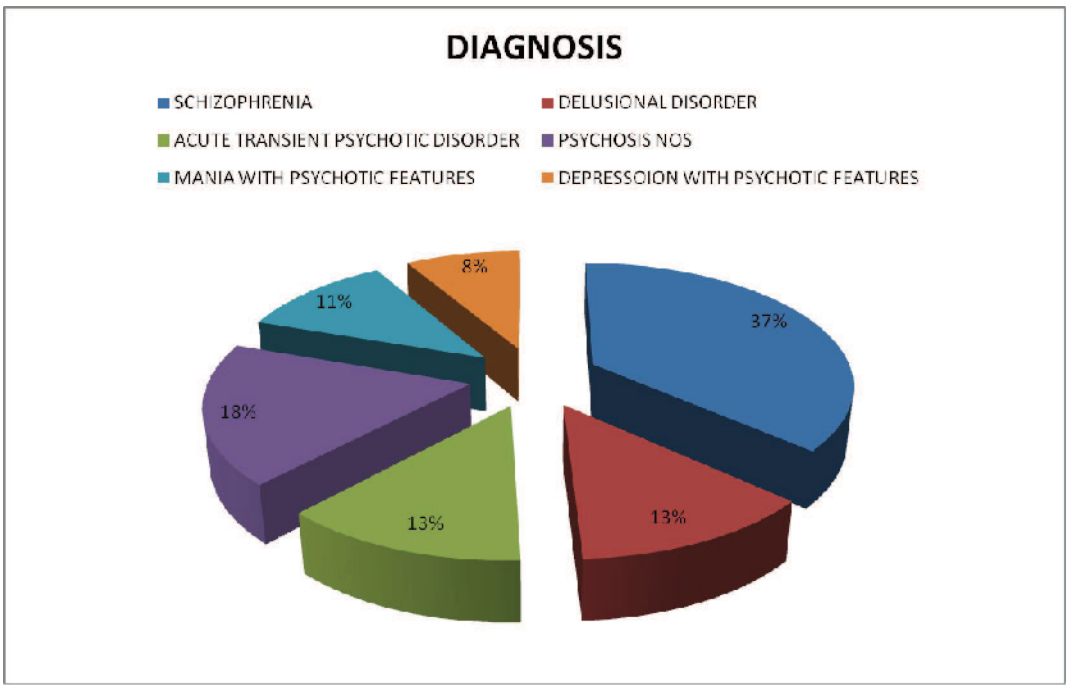


1. 31% were referred by Private Practioner ,
2. 26.8 % were referred by Government Hospitals
3. 9.9 % were referred by Primary Health Centers
4. only 28.2% Reached the hospital directly

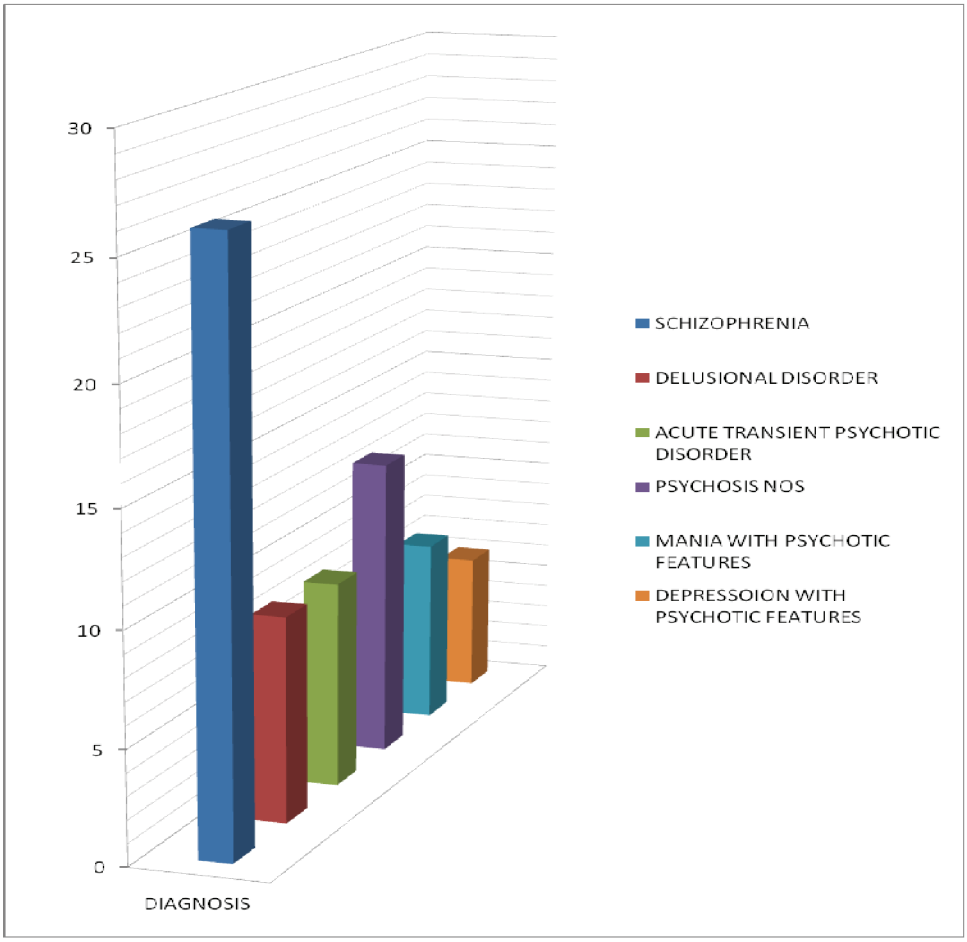
TABLE-7

DIAGNOSIS	Frequency	Percent
SCHIZOPHRENIA	26	36.6
DELUSIONAL DISORDER	9	12.7
ACUTE TRANSIENT PSYCHOTIC DISORDER	9	12.7
PSYCHOSIS NOS	13	18.3
MANIA WITH PSYCHOTIC FEATURES	8	11.3
DEPRESSOION WITH PSYCHOTIC FEATURES	6	8.5
Total	71	100.0

GRAPH-7A


DIAGNOSIS
SCHIZOPHRENIA
DELUSIONAL DISORDER
ACUTE TRANSIENT PSYCHOTIC DISORDER
PSYCHOSIS NOS
MANIA WITH PSYCHOTIC FEATURES
DEPRESSOION WITH PSYCHOTIC FEATURES
8%
11%
37%
18%
13%
13%

GRAPH-7B



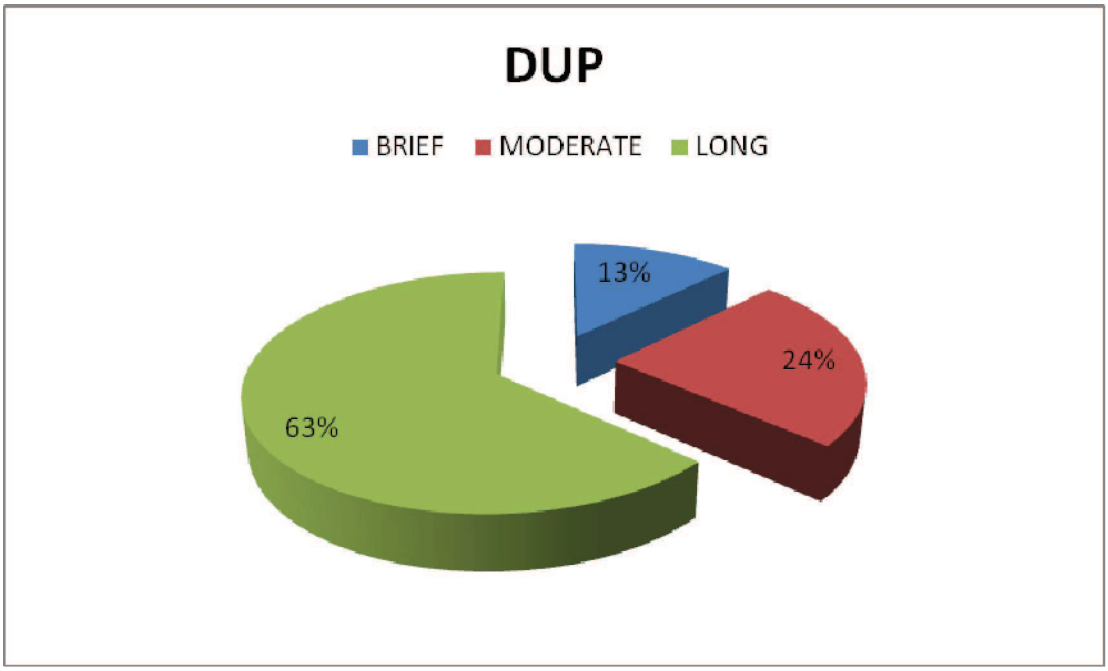
Among the first episode psychosis

1. 36.6%- schizophrenia
2. 18.3% psychosis Nos
3. 12.7% acute transient psychotic disorder, delusional disorder
4. 11.3 % mania with psychotic features
5. 8.5% depression with psychotic features

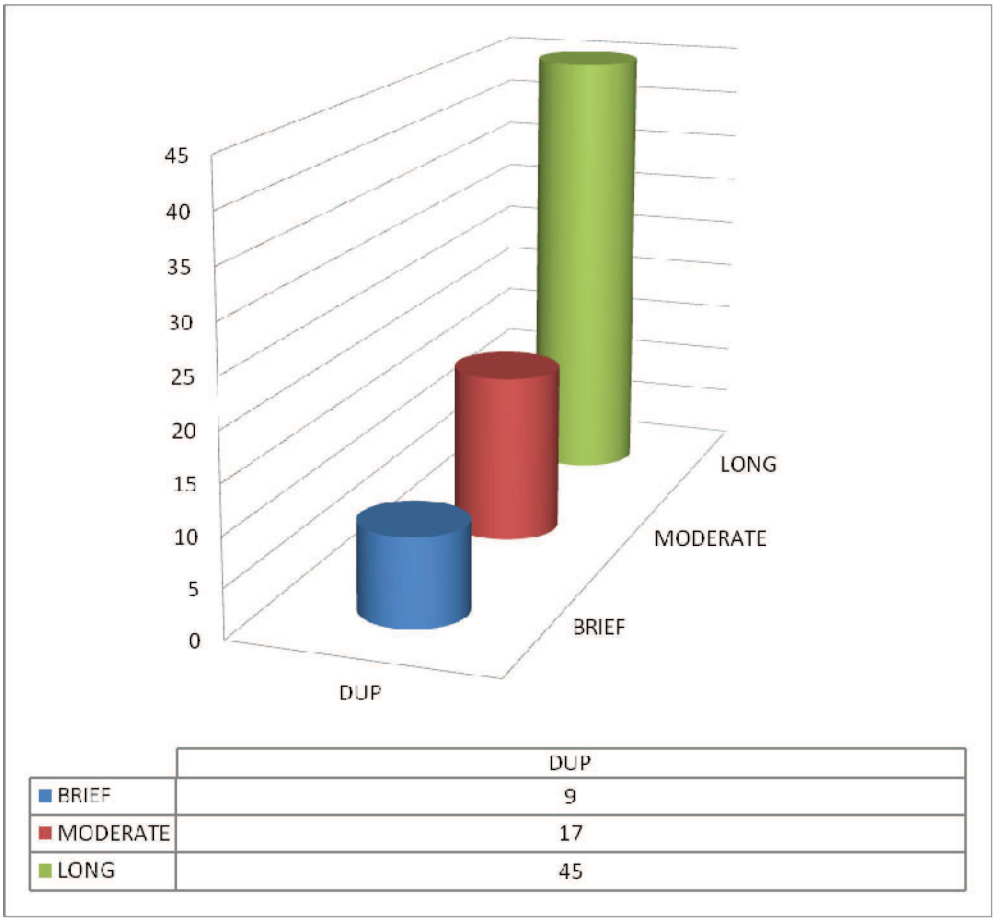
TABLE-8

Duration of Untreated Psychosis	Frequency	Percent
BRIEF Less than 30days	9	12.7
MODERATE 31to 180 days	17	23.9
LONG More than 181days	45	63.4
Total	71	100.0

GRAPH-8A



GRAPH-8B



	DUP
BRIEF	9
MODERATE	17
LONG	45

1. 63.4% had long DUP

2. 23.9% had moderate DUP

3. 12.7% had brief DUP

TABLE-9

PAS VS DUP

DUP	N	Mean	Std. Deviation	P- Value
BRIEF	9	.2356	.07923	
MODERATE	17	.2800	.13458	0.000
LONG	45	.4111	.12842	
Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means.

P= 0.000(<0.05)

mean Premorbid Adjustment Scale score shows a significant association with the Duration Of Untreated Psychosis .

mean score in the long DUP group being 0.41 highest than other 2 values.

Also the difference between the mean values of PAS among Brief, moderate, long are statistically significant.

TABLE-10

PAS vs PANSS (INITIAL)					
		PAS	**POSITIVE SCALE**	**NEGATIVE SCALE**	**GENERAL PSYCHO PATHOLOGYSCALE**
PAS	Pearson Correlation	1	.170	.393	.325
	P-value		.156	.001**	.006**
	N	71	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between PAS and POSITIVE SCALE is negative(-0.170) Increase in variable and decrease in other. But statistically not significant since p> 0.05
2. The correlation between PAS and NEGATIVE SCALE is positive(0.393). Increase in variable and there is increase in other.
3. The correlation between PAS and GENERAL PSYCHO PATHOLOGYSCALE is positive (.325). Increase in variable and there is increase in other
4. Since P<0.05 both are statistically significant.

TABLE-11

PAS vs PANSS 2 (AFTER 12 WEEKS)				
	PAS	POSITIVESCALE **2**	NEGATIVE SCALE 2	GENERAL PSYCHO PATHOLOGYSCALE 2
Pearson Correlation	1	.011	.421**	.367**
P-value		.927	.000	.002
N	71	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between PAS and POSITIVE SCALE 2 is positive (.011). Increase in variable and there is increase in other. But statistically not significant since P> 0.05

2. The correlation between PAS and NEGATIVE SCALE 2 is POSITIVE (.421). Increase in variable and there is increase in other.

3. The correlation between PAS and GENERAL PSYCHOPATHOLOGY SCALE 2 is POSITIVE(.367). Increase in variable and there is increase in other.

4. Since P< 0.05, both (2,3)are statistically significant

Paired T-Test was applied for testing PANSS (initial) VS(12weeks) later for same individuals

TABLE-12

	Mean	N	Std. Deviation	P- Value
POSITIVE SCALE	13.97	71	4.517	
POSITIVE SCALE **2**	10.75	71	3.219	0.000

It is observed that there is some difference in mean value POSITIVE SCALE and POSITIVE SCALE2 (13.97,10.75)and S.D values (4.517,3.219). By applying Paired T-test it is concluded that the difference is statistically significant. Since P value <0.05.

TABLE-13

	Mean	N	Std. Deviation	P- Value
NEGATIVE SCALE	14.93	71	5.303	
NEGATIVE SCALE 2	11.90	71	4.043	0.000

It is observed that there is some difference in mean value (14.93, 11.90)and S.D values (5.303,4.043). By applying Paired T-test that it is concluded the difference is statistically significant. Since P value <0.05.

TABLE-14

	Mean	N	Std. Deviation	P- Value
GENERALPSYCHO PATHOLOGYSCALE	26.07	71	5.522	
GENERAL PSYCHO PATHOLOGYSCALE 2	21.66	71	4.814	0.000

It is observed that there is some difference in mean value (26.07, 21.66)and S.D values (5.522,4.814). By applying Paired T-test it is concluded that the difference is statistically significant. Since P value <0.05.

TABLE-15

SOCIAL DIMENSION (OF PAS) VS DUP

		N	Mean	Std. Deviation	P- Value
SOCIAL DIMENSION OF PAS (S-PAS)	BRIEF	9	.1767	.06614	
	MODERATE	17	.2524	.13170	0.000
	LONG	45	.3462	.12785	
	Total	71	.3023	.13644	

One way ANOVA TEST was applied for comparison of means.

P= 0.000mean **S-PAS** shows a significant association with the Duration Of Untreated Psychosis . Also the difference between the mean values of **SOCIAL DIMENSION** (of PAS) among Brief, moderate, long are statistically significant. mean score in the long DUP group being 0.34 highest than other 2 values.

TABLE-16

ACADEMIC DIMENSION (OF PAS) VS DUP

		N	Mean	Std. Deviation	P- Value
ACADEMIC DIMENSION OF PAS (A-PAS)	BRIEF	9	.1778	.08105	0.002
	MODERATE	17	.2465	.10718	
	LONG	45	.3167	.11711	
	Total	71	.2823	.12030	

One way ANOVA TEST was applied for comparison of means.

P= 0.002 .mean **A-PAS** shows a significant

association with the Duration Of Untreated Psychosis. Also the difference between the mean values of ACADEMIC DIMENSION (OF PAS) among Brief, moderate, long are statistically significant.

mean score in the long DUP group being 0.31 highest than other 2 values.

TABLE-17

SOCIAL DIMENSION OF PAS vs PANSS (INITIAL)

		Positive Scale	Negative Scale	General Psycho Pathologyscale
SOCIAL DIMENSION OF PAS (S-PAS)	Pearson Correlation	-.089	.340**	.319**
	P-value	.461	.004	.007
	N	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between SOCIAL DIMENSION OF PAS and POSITIVE SCALE is NEGATIVE(.089). Increase in one variable and there is decrease in other.But statistically not significant since P> 0.05
2. The correlation between S-PAS and NEGATIVE SCALE is POSITIVE(.340). Increase in one variable and there is increase in other.
3. The correlation between S-PAS and GENERAL PSYCHOPATHOLOGY SCALE is POSITIVE (.319). Increase in one variable and there is increase in other.
4. Since P< 0.05, both (2,3)are statistically significant

TABLE-18

SOCIAL DIMENSION OF PAS vs PANSS 2 (AFTER 12 WEEKS)

		Positivescale 2	Negative Scale 2	General Psycho Pathology Scale 2
SOCIAL DIMENSION OF (S-PAS)	Pearson Correlation	.047	.407**	.358**
	P-value	.700	.000	.002
	N	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between SOCIAL DIMENSION OF PAS and POSITIVE SCALE2 is POSITIVE(0.047). Increase in variable and there is increase in other. But statistically not significant since $P > 0.05$
2. The correlation between S-PAS and NEGATIVE SCALE2 is POSITIVE(.407). Increase in one variable and there is increase in other.
3. The correlation between S-PAS and GENERAL PSYCHOPATHOLOGY SCALE 2 is POSITIVE (0.358) . Increase in variable and there is increase in other .
4. Since $P< 0.05$, both (2,3)are statistically significant.

TABLE-19

ACADEMIC DIMENSION OF PAS vs PANSS (INITIAL)

		Positive Scale	Negative Scale	General Psycho Pathology Scale
ACADEMIC DIMENSION OF PAS (A-PAS)	Pearson Correlation	-.065	.327**	.345**
	Sig. (2-tailed)	.593	.005	.003
	N	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between ACADEMIC DIMENSION OF PAS and POSITIVE SCALE is NEGATIVE(-.065). Increase in variable and there is decrease in other. But statistically not significant since $p > 0.005$

2. The correlation between A-PAS and NEGATIVE SCALE are POSITIVE(0.327). Increase in variable and there is increase in other.

3. The correlation between A-PAS and GENERAL PSYCHOPATHOLOGY SCALE is POSITIVE(.345). Increase in variable and there is increase in other .

4. Since $P < 0.05$, both (2,3)are statistically significant

TABLE-20

ACADEMIC DIMENSION OF PAS vs PANSS 2 (AFTER 12 WEEKS)

		POSITIVE SCALE2	NEGATIVE SCALE2	GENERAL PSYCHO PATHOLOGYSCALE2
ACADEMIC DIMENSION OF PAS (A-PAS)	Pearson Correlation	.060	.443**	.395**
	Sig. (2-tailed)	.620	.000	.001
	N	71	71	71

Pearson correlation test was employed for testing the Correlation.

1. It is noted that correlation between ACADEMIC DIMENSION OF PAS and POSITIVE SCALE2 is POSITIVE(.620). Increase in variable and increase in other. But statistically not significant since p> 0.05
2. The correlation between A-PAS and NEGATIVE SCALE2 is POSITIVE(.443) . Increase in variable and there is increase in other.
3. The correlation between A-PAS and GENERAL PSYCHOPATHOLOGY SCALE 2 is POSITIVE(.395). Increase in variable and there is increase in other .
4. Since P< 0.05, both (2,3)are statistically significant

TABLE-21

PAS VS AGE

PAS VS AGE		**age**
PAS	Pearson Correlation	-.358**
	P-value	.002
	N	71
Results		significant

Pearson correlation test was employed for testing the Correlation.

1. PAS and AGE are NEGATIVELY(-.358) correlated. Increase in variable and there is decrease in other.

2. Since P< 0.05, it is statistically significant.

TABLE-22

PAS vs AGE F ONSET OF PSYCHOSIS

PAS vs AGE OF ONSET OF PSYCHOSIS		AGE OF ONSET OF PSYCHOSIS
PAS	Pearson Correlation	-.469**
	P-value	.000
	N	71
Results		significant

Pearson correlation test was employed for testing the Correlation.

1. **PAS** and **AGE OF ONSET OF PSYCHOSIS** are NEGATIVELY (-.469) correlated. Increase in variable and there is decrease in other.

2. Since P< 0.05, it is statistically significant.

TABLE-23

PAS VS MARITAL STATUS

PAS VS MARITAL STATUS	N	Mean	Std. Deviation	P-VALUE
Unmarried	33	.4124	.13079	
Married	27	.2859	.14679	
Widow	5	.3800	.09823	.015
Divorced	3	.3600	.08718	
Seperated	3	.3567	.12055	
Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of PAS among unmarried, married, widow, Divorced, separated in Marital status group. The difference is statistically significant since $P=0.015 < 0.05$.

TABLE-24

PAS vs DIAGNOSIS

DIAGNOSIS	N	Mean	Std. Deviation	P-VALUE
Schizophrenia	26	.4135	.12696	
Delusional disorder	9	.2711	.10948	
Acute transient psychotic disorder	9	.2900	.09474	
Psychosis nos	13	.4754	.10357	
Mania with psychotic features	8	.2625	.12476	0.000
Depression with psychotic features	6	.2167	.11057	
Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of PAS among Schizophrenia, delusional Disorder, Acute Transient Psychotic Disorder, Psychosis Nos, Mania With Psychotic Features, Depression With Psychotic Features in Diagnosis group. The difference is statistically significant since $P=0.000 < 0.05$.

TABLE-25

PAS IN NON-AFFECTIVE PSYCHOSIS

N	57
Mean	.3856
Median	.4000
Std. Deviation	.13526

Mean and S.D of PAS in non affective psychosis 0.38 0.13

TABLE-26

PAS IN AFFECTIVE PSYCHOSIS

N	14
Mean	.2429
Median	.2550
Std. Deviation	.11678

Mean and S.D of PAS in affective psychosis 0.24 0.12

TABLE-27

PAS VS RESIDENCE

Pas VS Residence	N	Mean	Std. Deviation	P-VALUE
Urban	47	.3666	.14945	
Semi Urban	13	.3631	.11800	
Rural	11	.3118	.14462	0.520
Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means. The differences observed in the mean scores of PAS in Residence groups are statistically not significant since P=0.520 > 0.05.

TABLE-28

PAS vs OCCUPATION

Occupation	N	Mean	Std. Deviation	P-value
UNEMPLOYED	31	.3535	.14737	
UNSKILLED	13	.4246	.13464	
SEMISKILLED	16	.3350	.15100	0.415
SKILLED	9	.3189	.12057	
CLERK/SHOP OWNER/ FARMER	2	.3350	.14849	
Total	71	.3575	.14298	

P=0.415 > 0.05

One way ANOVA TEST was applied for comparison of means. The differences observed in the mean scores of PAS occupation groups are statistically not significant since P=0.415(>0.05)

TABLE-29

PAS VS PATIENT EDUCATION

Patient Education	N	Mean	Std. Deviation	P-VALUE
Illeterate	6	.3733	.11656	
Upto V std	14	.3136	.15164	
VI-VIII std	12	.3175	.17762	
IX-X std	16	.3869	.13903	.575
XI-XII std/dip	15	.4047	.14372	
Graduate/pg	6	.3400	.08390	
Professional	2	.3200	.05657	
Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means. The differences observed in the mean scores of PAS are statistically not significant since P=0.575 (> 0.05).

TABLE-30

SEX vs AGE

	Sex	N	Mean	Std. Deviation	sig
Age	Male	41	31.15	8.671	.058
	Female	30	35.07	8.191	
	Total	71	32.80	8.635	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean AGE between males and females . The difference is statistically significant since P =0.05 Females were older than males at the presentation of FEP.

TABLE-31

SEX vs ONSET OF PSYCHOSIS

	Sex	N	Mean	Std. Deviation	sig
ONSET OF PSYCHOSIS	MALE	41	28.78	7.967	.054
	FEMALE	30	32.53	7.986	
	Total	71	30.37	8.135	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean AGE OF ONSET OF PSYCHOSIS between Males and Females. The difference is statistically significant since P=0.05 Males had an YOUNGER AGE of onset than Females.

TABLE-32

SEX vs PAS

	Sex	N	Mean	Std. Deviation	Sig
PAS	MALE	41	.3905	.12747	.022
	FEMALE	30	.3123	.15258	
	Total	71	.3575	.14298	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of PAS among Males and Females. The difference is statistically significant since P=0.02(< 0.05).

mean PAS score is HIGHER in Males compared to Females.

TABLE-33

SEX VS PANSS (INITIAL)

	Sex	N	Mean	Std. Deviation	sig
POSITIVE SCALE	MALE	41	14.07	4.714	.827
	FEMALE	30	13.83	4.308	
	Total	71	13.97	4.517	
NEGATIVESCALE	MALE	41	15.49	5.482	.303
	FEMALE	30	14.17	5.038	
	Total	71	14.93	5.303	
GENERAL PSYCHOPAHOLOGY SCALE	MALE	41	27.17	5.044	.049
	FEMALE	30	24.57	5.870	
	Total	71	26.07	5.522	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of POSITIVE SCALE, NEGATIVESCALE, GENERAL PSYCHOPAHOLOGY SCALE. Mean scores in Males were higher in all three scales than Females . Also were higher than the total mean scores .

The difference in POSITIVE, NEGATIVE SCALE were statistically not significant but statistically significant difference was seen in GENERAL PSYCHOPAHOLOGY SCALE since P=0.04(< 0.05).

TABLE-34

SEX vs. AVERAGE REDUCTION IN PANSS

	Sex	N	Mean	Std. Deviation	sig
AVERAGE REDUCTION IN PANSS	MALE	41	18.9024	9.11539	.790
	FEMALE	30	18.3333	8.44591	
	Total	71	18.6620	8.78138	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of **AVERAGE REDUCTION IN ANSS** score at the end of 12 weeks of treatment,between Males and Females. The difference is statistically not significant since P=0.790 (> 0.05)

TABLE-35

DUP vs. DIAGNOSIS

		DIAGNOSIS					
DUP		**SCHIZOPHRENIA**	**DELUSIONAL DISORDER**	**ACUTE TRANSIENT PSYCHOTIC DISORDER**	**PSYCHOSIS NOS**	**MANIA WITH PSYCHOTIC FEATURES**	**DEPRESSOION WITHPSYCHOTIC FEATURES**
brief	Count	0	0	5	0	3	1
	% within DUP	.0%	.0%	55.6%	.0%	33.3%	11.1%
moderate	Count	3	3	3	1	3	4
	% within DUP	17.6%	17.6%	17.6%	5.9%	17.6%	23.5%
long	Count	23	6	1	12	2	1
	% within DUP	51.1%	13.3%	2.2%	26.7%	4.4%	2.2%
Total	Count	26	9	9	13	8	6
	% within DUP	36.6%	12.7%	12.7%	18.3%	11.3%	8.5%

P VALUE- 0.000 SIGNIFICANT

Pearson chi-square test was applied for testing the counts. It is observed that there is some difference 0% 17.6% 51.1% IN schizophrenia within DUP 0, 17.6%,13.3% in Delusional Disorder is noted within DUP , 55.6% 17.6% 2.2% in ATPD is noted within DUP 0, 5.9% , 26.7% in Psychosis Nos is noted within DUP,33.3,17.6 , 4.4 in Mania With Psychotic Features is noted within DUP 11.1% , 23.5% 2.2% in Depression With Psychotic Features is noted within DUP these are statistically significant since $P < 0.05$.

TABLE-36

DUP vs. RESIDENCE

			RESIDENCE			Total
			URBAN	SEMIURBAN	RURAL	
DUP	brief	Count	7	0	2	9
		% within DUP	77.8%	.0%	22.2%	100.0%
	moderate	Count	11	4	2	17
		% within DUP	64.7%	23.5%	11.8%	100.0%
	long	Count	29	9	7	45
		% within DUP	64.4%	20.0%	15.6%	100.0%
Total		Count	47	13	11	71
		% within DUP	66.2%	18.3%	15.5%	100.0%

P VALUE- 0.628

Pearson chi-square test was applied for testing the counts. It is observed that the differences within DUP, is not statistically significant since $P > 0.05$

TABLE-37

DUP vs. MARITAL STATUS

			MARITAL STATUS					Total
			UNMARRIED	MARRIED	WIDOW	DIVORCED	SEPERATED	
DUP	brief	Count	8	1	0	0	0	9
		% within DUP	88.9%	11.1 %	.0%	.0%	.0%	100.0%
	mode rate	Count	6	8	1	1	1	17
		% within DUP	35.3%	47.1 %	5.9 %	5.9%	5.9%	100.0%
	long	Count	19	18	4	2	2	45
		% within DUP	42.2%	40.0 %	8.9 %	4.4%	4.4%	100.0%
Total		Count	33	27	5	3	3	71
		% within DUP	46.5%	38.0 %	7.0 %	4.2%	4.2%	100.0%

P VALUE- 0.422

Pearson chi-square test was applied for testing the counts. It is observed that the differences within DUP among marital status , is not statistically significant since P > 0.05

TABLE-38

DUP vs. OCCUPATION

			OCCUPATION					Total
			UNEMPLOYED	UNSKILLED	SEMISKILLED	SKILLED	CLERK/SHOP OWNER/FARMER	
DUP	brief	Count	3	2	4	0	0	9
		% within DUP	33.3%	22.2%	44.4%	.0%	.0%	100.0%
	moderate	Count	9	2	2	4	0	17
		% within DUP	52.9%	11.8%	11.8%	23.5%	.0%	100.0%
	long	Count	19	9	10	5	2	45
		% within DUP	42.2%	20.0%	22.2%	11.1%	4.4%	100.0%
Total		Count	31	13	16	9	2	71
		% within DUP	43.7%	18.3%	22.5%	12.7%	2.8%	100.0%

P VALUE- 0.446 NS

Pearson chi-square test was applied for testing the counts. It is observed that the differences within DUP among occupation , is not statistically significant since P > 0.05

TABLE-39

DUP vs. PATIENT EDUCATION

ti DUP		PATIENT EDUCATION						
		ILLETERATE	**UPTO V STD**	**VI-VIII STD**	**IX-X STD**	**XI-XII STD/ DIP**	**GRADUATE /PG**	**PROFESSIONAL**
brief	Count	2	1	2	1	1	2	0
	% within DUP	22.2%	11.1%	22.2%	11.1%	11.1%	22.2%	.0%
moderate	Count	1	6	3	4	3	0	0
	% within DUP	5.9%	35.3%	17.6%	23.5%	17.6%	.0%	.0%
long	Count	3	7	7	11	11	4	2
	% within DUP	6.7%	15.6%	15.6%	24.4%	24.4%	8.9%	4.4%
Total	Count	6	14	12	16	15	6	2
	% within DUP	8.5%	19.7%	16.9%	22.5%	21.1%	8.5%	2.8%

P VALUE- 0.500

Pearson chi-square test was applied for testing the counts. It is observed that

the differences within DUP among patient education , is not statistically

significant since P > 0.05

TABLE-40

DUP vs AGE , AGE OF ONSET

		N	Mean	Std. Deviation	P-VALUE
	DUP				
AGE	BRIEF	9	28.78	5.044	
	MODERATE	17	34.29	7.943	.291
	LONG	45	33.04	9.318	
	Total	71	32.80	8.635	
AGE OF ONSET PSYCHOSIS	BRIEF	9	28.56	5.270	.176
	MODERATE	17	33.53	7.835	
	LONG	45	29.53	8.524	
	Total	71	30.37	8.135	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of age , age of onset of psychosis in three groups of DUP . The differences in mean scores are statistically not significant since P>0.05.

TABLE-41

DUP vs PANSS (initial)		N	MEAN PANSS	
POSITIVE SCALE	LESS THAN 30days	9	13.89	0.946
	31 days to 180 days	17	14.29	
	181 days and more	45	13.87	
	Total	71	13.97	
NEGATIVE SCALE	LESS THAN 30days	9	13.33	0.062
	31 days to 180 days	17	12.82	
	181 days and more	45	16.04	
	Total	71	14.93	
GENERAL PSYCHO PATHOLOGY SCALE	LESS THAN 30days	9	24.44	0.457
	31 days to 180 days	17	25.35	
	181 days and more	45	26.67	
	Total	71	26.07	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of POSITIVE SCALE, NEGATIVE SCALE, GENERAL PSYCHOPATHOLOGY SCALE[**PANSS** (initial)] in three groups of DUP . The differences in mean scores are statistically not significant since $P>0.05$.

TABLE-42

DUP vs PANSS2(after 12weeks)		N	MEAN PANSS	P-value
POSITIVE SCALE	LESS THAN 30days	9	9.67	0.403
	31 days to 180 days	17	10.35	
	181 days and more	45	11.11	
	Total	71	10.75	
NEGATIVE SCALE	LESS THAN 30days	9	11.00	0.071
	31 days to 180 days	17	9.82	
	181 days and more	45	12.87	
	Total	71	11.90	
GENERAL PSYCHO PATHOLOGY SCALE	LESS THAN 30days	9	19.67	0.092
	31 days to 180 days	17	20.24	
	181 days and more	45	22.60	
	Total	71	21.66	

One way ANOVA TEST was applied for comparison of means. It is observed that there is some difference in mean value of POSITIVE SCALE , NEGATIVE SCALE, GENERAL PSYCHOPATHOLOGY SCALE [**PANSS2 (after 12weeks)]** in three groups of DUP. The differences in mean scores are statistically not significant since $P>0.05$.

TABLE-43

DUP vs AVERAGE REDUCTION IN PANSS SCORE

Average reduction in PANSS score	N	Mean	Std. Deviation
LESS THAN 30days	9	21.0000	8.77496
31 days to 180 days	17	21.7059	7.88008
181 days and more	45	17.0444	8.87273
Total	71	18.6620	8.78138

Mean reduction in PANSS score was less in long DUP than other 2 groups

TABLE-44

DUP vs. PATHWAY TO CARE

	PATHWAY TO CARE					
DUP	**PHC**	**GH**	**PRIVATE PRACTIONER**	**ALTERNATIVE MEDICINE**	**DIRECT**	**TOTAL**
LESS THAN 30days	1	2	3	1	2	9
31 days to 180 days	2	5	7	0	3	17
181 days and more	4	12	12	2	15	45
TOTAL	7	19	22	3	20	71

P= 0.56 Pearson chi-square test was applied for testing the counts. It is bserved that the differences within DUP among Pathways to care , is not statistically significant since P > 0.05 .

TABLE-45

AGE vs POSITIVE SCALE (initial PANSS)

		AGE	POSITIVE SCALE
AGE	Pearson Correlation	1	.239*
	P-value		.044
	N	71	71

Pearson correlation test was employed for testing the Correlation. AGE IS POSITIVELY correlated with POSITIVE SCALE(initial PANSS). Increase in variable and there is increase in other. Since P=0.04(< 0.05), it is statistically significant .

DISCUSSION

DISCUSSION

As the TABLE (**9)** shows there was significant association (P=0.000) between the Premorbid Adjustment Score and duration of untreated psychosis. Therefore the hypothesis is rejected.

Similar results was obtained by Browne et al. But in the study done by Haas and Sweeney et al there was no significant relation between Premorbid Adjustment Score and duration of untreated psychosis. Mean Premorbid Adjustment Score obtained in this study was 0.23 in the brief DUP group, 0.28 in moderate group, 0.41 in the log DUP group.

The Premorbid Adjustment Score was considerably higher in the Long DUP group as compared to the other 2 groups. the score differed by almost 50% between Long DUP and other 2 groups. TABLE (10) Correlation analysis between Premorbid Adjustment Score and PANSS score revealed a Positive correlation between Premorbid Adjustment Score and Negative scale in PANSS .This is indicated by a P- value of 0.001. Positive correlation was also seen between Premorbid Adjustment Score and General Psychopathology scale with a P –value of 0.006. No correlation was seen between positive scale and Premorbid Adjustment Score.

Haas and Sweeney et al showed similar results in their studies. Jeepsen et al found independent association to exist between Premorbid Adjustment Score

and Negative symptoms. Those with Long DUP had increased negative symptoms at the time of presentation (Levitt et al). In the study by strous et al Positive correlation was seen between Negative symptoms and Premorbid Adjustment Score at first contact with mental health services.

TABLE (11) Correlation analysis between Premorbid Adjustment Score and PANSS score at the end of 12 weeks follow up, revealed a Positive correlation between Premorbid Adjustment Score and Negative scale and General Psychopathology scale in PANSS. This is indicated by a P- value of 0.000, 0.002 respectively. No significant correlation was seen between Positive scale and Premorbid Adjustment Score.

As described in the previous studies Larsen et al social, academic dimension of Premorbid Adjustment Score also showed a significant association with DUP, P-value obtained was 0.000 , 0.002 TABLE (15), (16). Positive correlation also was observed between social dimension and negative and general psychopathology scale of PANSS (initial) TABLE (17) P-values obtained were 0.004, 0.007 respectively. Positive correlation also was observed between social dimension and negative and general psychopathology scale of PANSS (after 12 weeks)TABLE (18) P-values obtained were .0.000, 0.002 respectively.

Positive correlation also was observed between Academic dimension and Negative and General Psychopathology Scale of PANSS (initial) TABLE (19) P-values obtained were 0.005, 0.003 respectively. Positive correlation also was observed between academic dimension and Negative, General psychopathology scale of PANSS (after 12 weeks) (TABLE (20)) P-values obtained were .0.000, 0.001 respectively. TABLE (12, 13, 14) There was statistically significant Reduction in PANSS score obtained with 12 weeks of treatment.

Significant relation was seen between Diagnosis and mean Premorbid Adjustment Score with a P-value of 0.000 as shown in the TABLE ((24). Highest mean Premorbid Adjustment Score of 0.47 was seen in those with a diagnosis of Psychosis Nos, followed by those with a diagnosis of Schizophrenia with a mean score of 0.41. a least mean score of 0.21 was seen in depression with psychotic features. TABLE ((25) (26)As compared to non affective psychosis affective psychosis had a lesser mean of 0.38, where as it was 0.44 in the non affective psychosis group. Browne et al, non affective psychosis has a poorer outcome than affective psychosis shown by a high Premorbid Adjustment Score in the former group than the latter group.

Significant relation was seen between marital status and mean Premorbid Adjustment Score with a P-value of 0.015 as shown in the TABLE ((23) . Premorbid Adjustment Score was highest in the unmarried group 0.41 where

as in the married the mean score was 0.28. The Premorbid Adjustment Scores show a significant impairment in adjustment in the unmarried group. TABLE (29) Premorbid Adjustment Scores were higher for those whose education level was between V Std to XII std. This decline in their academic shows that a deteriorative process with its onset at adolescent age group which might progress or stabilise over the time period.

However the P-value obtained was 0.575. Highest mean Premorbid Adjustment Score of 0.40 was seen in those with education level of XI- XII std followed by 0.38 in high school (IX-X std) level of education .As shown by Larsen et al there is a marked deterioration in the social, academic function leading to decline in years spent in education and meaningful activity. The mean Premorbid Adjustment Score were least in the group with professional education. Jeepsen et al those with high Premorbid Adjustment Score have poor school adaptation and poor vocational outcome.

As shown in the TABLE ((21) a Negative correlation was seen between mean Premorbid Adjustment Score and Age at the time of presentation with a P-value of 0.002. As shown in the TABLE ((22) a Negative correlation was seen between mean Premorbid Adjustment Score and Age of Onset Of Psychosis with a P-value of 0.000. TABLE (28)Though statistically significant association was not seen between occupation and Premorbid Adjustment Score (P-value=0.415) high mean Premorbid Adjustment Score was seen in

unskilled labourers 0.42 followed by unemployed 0.35. TABLE (27)Statistically significant association was not seen between premorbid adjustment score and residence.

Mean Age of presentation shows that males were younger than females at the time of presentation TABLE (30) . Mean age among Females was 35.07 years where as it was 31.15 years in Males. a mean age of 32.80 years was seen in the whole group. P-value=0.58 obtained was statistically significant. Strous et al reported a mean age of presentation of 25 years. Haas and Sweeney observed no difference in age at the time of presentation of psychosis

Mean Age Of Onset Of Psychosis was also earlier in males as shown in the TABLE (31). Mean age of onset of psychosis among Females was 32.53years where as it was 28.78 years in Males . A mean age of 30.37 years was seen in the whole group. P-value=0.054 obtained was statistically significant. Haas and Sweeney et al observed no difference in age of onset of psychosis. Strous et al reported a mean Age Of Onset Of Psychosis of 23.9 years.

Mean Premorbid Adjustment Score was higher in males than females TABLE ((32). Mean premorbid adjustment score among Females was 0.31 where as it was 0.39 years in Males. A mean score of 0.35 was seen in the

whole group. P-value=0.022 obtained was statistically significant. This shows a better adjustment among Females than Males. TABLE (33)There was some difference in Mean values of Positive scale, Negative scale, General Psychopathology Scale scores of PANSS at the time of presentation in males and females and the difference was significant (P-value of 0.04) in General Psychopathology Scale. The Mean scores were higher among Males than Females.

TABLE (34)The Mean reduction in PANSS score after 12 weeks was similar between both Male and Female . Mean reduction among males was 18.90% in females it was 18.33% but this was not statistically significant (P-value of 0.790)

TABLE (3)(36) 47 of 71 constituting 66% of the total came from an urban population despite coming from an urban population 64% had Long DUP with presentation to mental health care services 1 -2 years after the onset of illness.

TABLE (45) A Positive correlation is seen between age at the time of presentation and positive scale of PANSS P-value -0.044. TABLE ((37) among those with Long DUP 40 % were married, 42% unmarried. But the relation obtained was not statistically significant (P value 0.422).

TABLE (8) among those with Long DUP 42% were unemployed, 20% were unskilled labourers. Thus most of them with a long DUP have poor vocational outcome, More financially dependent on the care givers . But the relation obtained was not statistically significant (P value 0.500). TABLE (39) among those with Long DUP 24.4% had higher secondary level of education, 24.4% had high school education.

TABLE (40) no statistically significant relation (P value -0.500) was seen between Duration Of Untreated Psychosis and Age at the time of presentation . The mean Age of presentation was earlier in brief DUP group at 28.78 years , in moderate DUP it was 34.29 years, in Long DUP it was 33.04 years. TABLE (40) no statistically significant relation (P value 0.500) was seen between Duration Of Untreated Psychosis and Age Of Onset of Psychosis. The mean age at onset was earlier in brief DUP group at 28.56 years, in moderate DUP it was 33.53 years, in Long DUP it was 29.53 years.

TABLE (41) no statistically significant relation (P value >0.05)was seen between Duration Of Untreated Psychosis and PANSS (initial) score. Mean Positive scale score was highest in moderate DUP group. Mean Negative scale score was highest in Long DUP group. Mean General psychopathology scale score was also highest in Long DUP group.

TABLE (42) no statistically significant relation (P value >0.05)was seen between Duration Of Untreated Psychosis and PANSS (after12weeks)

score . Mean Positive scale score was highest in long DUP group . Mean Negative scale score was highest in Long DUP group . Mean General Psychopathology Scale score was also highest in Long DUP group. This shows a better treatment response with other groups compared to long DUP. TABLE (43) no statistically significant relation (P value >0.05) was seen between Duration Of Untreated Psychosis and average reduction in PANSS score was the least 17.04% in Long DUP group . This shows a better treatment response with other groups compared to Long DUP .

TABLE (45) Positive correlation was seen between Age at the time of presentation and positive scale of PANSS (initial) with a P-value of 0.04.

TABLE (44) 28% 20 out 71 came directly to the hospital .Among the rest 22% were referred by Private Practioner (mostly general physician) 26.9 % from Government Hospital , 9.9% from primary health centres . Amanda et al general physician in the referral pathway should have better knowledge about identifying psychiatric symptoms . This enhances the early referral of patients with psychiatric symptoms to mental health services .

SUMMARY

SUMMARY

This study was conducted in the Department of Psychiatry, Medical College Hospital. All the patients with First Episode Psychosis meeting the inclusion criteria were include in the study. The aim was to study the association between premorbid adjustment and duration of untreated psychosis also with clinical variables. The main assessment tools were M.I.N.I, Premorbid adjustment scale, PANSS.

Out of the 95 consecutive patients included in the study 71 completed the study. PANSS was applied initially also 12 weeks later after initiation of treatment. 41 were males, 30 females. most of them were from urban population ,education was up to high school . Most of them were unemployed, unskilled labourers. 63% presented with a long duration of untreated psychosis.

26 had a diagnosis of schizophrenia, 13 were Psychosis Nos, 9 with delusional disorder, 9 acute transient psychotic disorder, mania with psychotic feature in 8, depression with psychotic features in 6. A significant association was found between premorbid adjustment score and duration of untreated psychosis, also with the PANSS score at the time of presentation and 12 weeks after the initiation of treatment. Despite the varying DUP the response to 12 weeks of continuous treatment was significant in all the groups.

Males had a poor premorbid adjustment compared to females, early age of onset, increased negative symptoms at the time of presentation, decreased reduction of symptoms with treatment .Premorbid adjustment was better in affective psychosis than in non affective psychosis. Premorbid adjustment was poor in those with decreased academic achievement, employment. Those who were married had a better premorbid adjustment.

CONCLUSION

CONCLUSION

Even before the onset symptoms there is a significant decline in the interaction f the person with the immediate environment indicated by decreased peer group involvement , decreased socialisation , academic, functional decline .

Though the adjustment problems may arise in most of the adolescents it tends to remit gradually without any impairment in social and academic functioning . But a small group of them proceed to further deterioration with onset of psychotic symptoms in their subsequent stages of life . Retrospective assessment of new onset psychosis shows a consistent occurrence of behavioural problems . The strength of association between premorbid adjustment problems and the illness which are to be manifest in a later date though convincing is not strong enough to recommend a screening procedure for those with adjustment problems. Therefore a sudden onset decline in social interaction , functioning of a person when not associated with any identifiable, reasonable stressors should be handled carefully as this may be the marker of ongoing deteriorative process especially in adolescents. Retrospective identification of the impaired premorbid adjustment would help us grouping the high risk individuals and treat them with greater care at earlier stages. This helps improving the prognosis of the patient.

Adequate knowledge about early psychotic symptoms which might be missed by the care givers, should be given to primary care physicians, so that they can be integrated into the referral pathway of mental health care services.

LIMITATIONS

LIMITATIONS

1. The sample size in this study is relatively small and it may not be possible to generalize the findings.

2. A structured tool for assessing DUP was not used.

3. There is no uniform definition of DUP, PAS a lot of disagreements is there between various researchers in this regard.

4. Most of the information in PAS was assessed based on the information given by the informant retrospectively, a recall bias is possible.

5. Remission of the patient was not observed as it beyond the scope of the study.

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ANNEXURES

PRO-FORMA

NAME:

AGE :

SEX :MALE –1 FEMALE-2

RESIDENCE: URBAN/SEMIURBAN/RURAL

EDUCATION: ILLETERATE/ < VSTD / VI TO VIII STD/ IX TO X STD/XI TO XII STD DIPLOMA/GRADUATE/PG /PROFESSIONAL

OCCUPATION:UNEMPLOYED/ UNSKILLED/ SEMISKILLED/ SKILLED/ CLERICAL SHOP OWNER FARMER/ SEMI PROFESSIONAL/ PROFESSIONAL

MARITAL STATUS: UNMARRIED / MARRIED / WIDOW / DIVORCED/ SEPERATED

SOCIOECNOMIC STATUS : UPPER / UPPERMIDDLE/ LOWER MIDDLE/ UPPERLOWER/ LOWER

FAMILY HISTORY : 1- YES 2 –NO

PATHWAY TO CARE

1-PHC

2-GH

3-PRIVATE PRACTIONER

4-ALTERNATIVE MEDICINE

5-MAGICORELIGIOUS

6-DIRECT

DURATION OF UNTERARED PSYCHOSIS

1-- <30DAYS

2 – 31TO 180DAYS

3—181 AND MORE DAYS

DIAGNOSIS

1--SCHIZOPHRENIA

2--DELUSIONAL DISORDER

3--ACUTE TRANSIENT PSYCHOTIC DISORDER

4--PSYCHOSIS NOS

5--MANIA WITH PSYCHOTIC FEATURES

6--DEPRESSION WITH PSYCHOTIC FEATURES

PANSS (initial)

1. POSITIVE SCALE
2. NEGATIVE SCALE
3. GENERAL PSYCHOPATHOLOGY SCALE

PANSS 2(after 12 weeks)

1. POSITIVE SCALE 2
2. NEGATIVE SCALE 2
3. GENERAL PSYCHOPATHOLOGY SCALE 2

IMPROVEMENT IN SCORES

PAS

PREMORBID ADJUSTMENT SCALE

AVERAGE OF

CHILDHOOD—6TO11 (a)

EARLY ADOLESCENCE – 12TO15 (b)

LATE ADOLESCENCE—16TO18 (c)

ADULT >19 (d)

MARRIAGE (e)

GENERAL SECTION (f)

ACADEMIC DIMENSION a+b+c/3

SOCIAL DIMENSION a+b+c+d/4

M.I.N.I.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW

English Version 5.0.0

DSM-IV

USA: **D. Sheehan, J. Janavs, R. Baker, K. Harnett-Sheehan, E. Knapp, M. Sheehan**
University of South Florida - Tampa

FRANCE: **Y. Lecrubier, E. Weiller, T. Hergueta, P. Amorim, L. I. Bonora, J. P. Lépine**
Hôpital de la Salpétrière - Paris

DISCLAIMER

Our aim is to assist in the assessment and tracking of patients with greater efficiency and accuracy. Before action is taken on any data collected and processed by this program, it should be reviewed and interpreted by a licensed clinician.

This program is not designed or intended to be used in the place of a full medical and psychiatric evaluation by a qualified licensed physician – psychiatrist. It is intended only as a tool to facilitate accurate data collection and processing of symptoms elicited by trained personnel.

M.I.N.I. 5.0.0 (July 1, 2006)

L. PSYCHOTIC DISORDERS AND MOOD DISORDER WITH PSYCHOTIC FEATURES

ASK FOR AN EXAMPLE OF EACH QUESTION ANSWERED POSITIVELY. CODE **YES** ONLY IF THE EXAMPLES CLEARLY SHOW A DISTORTION OF THOUGHT OR OF PERCEPTION OR IF THEY ARE NOT CULTURALLY APPROPRIATE. BEFORE CODING, INVESTIGATE WHETHER DELUSIONS QUALIFY AS "BIZARRE".

DELUSIONS ARE "BIZARRE" IF: CLEARLY IMPLAUSIBLE, ABSURD, NOT UNDERSTANDABLE, AND CANNOT DERIVE FROM ORDINARY LIFE EXPERIENCE.

HALLUCINATIONS ARE SCORED "BIZARRE" IF: A VOICE COMMENTS ON THE PERSON'S THOUGHTS OR BEHAVIOR, OR WHEN TWO OR MORE VOICES ARE CONVERSING WITH EACH OTHER.

		Now I am going to ask you about unusual experiences that some people have.			BIZARRE
L1	a	Have you ever believed that people were spying on you, or that someone was plotting against you, or trying to hurt you? **NOTE**: ASK FOR EXAMPLES TO RULE OUT ACTUAL STALKING.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ➡**L6**
L2	a	Have you ever believed that someone was reading your mind or could hear your thoughts, or that you could actually read someone's mind or hear what another person was thinking?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ➡**L6**
L3	a	Have you ever believed that someone or some force outside of yourself put thoughts in your mind that were not your own, or made you act in a way that was not your usual self? Have you ever felt that you were possessed? CLINICIAN: ASK FOR EXAMPLES AND DISCOUNT ANY THAT ARE NOT PSYCHOTIC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ➡**L6**
L4	a	Have you ever believed that you were being sent special messages through the TV, radio, or newspaper, or that a person you did not personally know was particularly interested in you?	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do you currently believe these things?	NO	YES	YES ➡**L6**
L5	a	Have your relatives or friends ever considered any of your beliefs strange or unusual? INTERVIEWER**:** ASK FOR EXAMPLES. ONLY CODE **YES** IF THE EXAMPLES ARE **CLEARLY** DELUSIONAL IDEAS NOT EXPLORED IN QUESTIONS L1 TO L4, FOR EXAMPLE, SOMATIC OR RELIGIOUS DELUSIONS OR DELUSIONS OF GRANDIOSITY, JEALOUSY, GUILT, RUIN OR DESTITIUTION, ETC.	NO	YES	YES
	b	**IF YES OR YES BIZARRE:** do they currently consider your beliefs strange?	NO	YES	YES
L6	a	Have you ever heard things other people couldn't hear, such as voices? HALLUCINATIONS ARE SCORED "BIZARRE" ONLY IF PATIENT ANSWERS **YES** TO THE FOLLOWING:	NO	YES	
		IF YES: Did you hear a voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO		YES
	b	**IF YES OR YES BIZARRE TO L6a:** have you heard these things in the past month? HALLUCINATIONS ARE SCORED "BIZARRE" ONLY IF PATIENT ANSWERS **YES** TO THE FOLLOWING: Did you hear a voice commenting on your thoughts or behavior or did you hear two or more voices talking to each other?	NO	YES	YES ➡**L8b**

L7 a Have you ever had visions when you were awake or have you ever seen things other people couldn't see? NO YES
CLINICIAN: CHECK TO SEE IF THESE ARE CULTURALLY INAPPROPRIATE.

b **IF YES:** have you seen these things in the past month? NO YES

CLINICIAN'S JUDGMENT

L8 b IS THE PATIENT CURRENTLY EXHIBITING INCOHERENCE, DISORGANIZED SPEECH, OR MARKED LOOSENING OF ASSOCIATIONS? NO YES

L9 b IS THE PATIENT CURRENTLY EXHIBITING DISORGANIZED OR CATATONIC BEHAVIOR? NO YES

L10 b ARE NEGATIVE SYMPTOMS OF SCHIZOPHRENIA, E.G. SIGNIFICANT AFFECTIVE FLATTENING, POVERTY OF SPEECH (ALOGIA) OR AN INABILITY TO INITIATE OR PERSIST IN GOAL-DIRECTED ACTIVITIES (AVOLITION), PROMINENT DURING THE INTERVIEW? NO YES

L11 a ARE 1 OR MORE « a » QUESTIONS FROM L1a TO L7a CODED **YES OR YES BIZARRE** AND IS EITHER:

MAJOR DEPRESSIVE EPISODE, (CURRENT OR RECURRENT)
OR
MANIC OR HYPOMANIC EPISODE, (CURRENT OR PAST) CODED **YES**? NO →L13 YES

IF NO TO L11 a, CIRCLE NO IN BOTH 'MOOD DISORDER WITH PSYCHOTIC FEATURES' DIAGNOSTIC BOXES AND MOVE TO L13.

b You told me earlier that you had period(s) when you felt (depressed/high/persistently irritable).

Were the beliefs and experiences you just described (SYMPTOMS CODED **YES** FROM **L1a** TO **L7a**) restricted exclusively to times when you were feeling depressed/high/irritable?

IF THE PATIENT EVER HAD A PERIOD OF AT LEAST 2 WEEKS OF HAVING THESE BELIEFS OR EXPERIENCES (PSYCHOTIC SYMPTOMS) WHEN THEY WERE NOT DEPRESSED/HIGH/IRRITABLE, CODE NO TO THIS DISORDER.

IF THE ANSWER IS NO TO THIS DISORDER, ALSO CIRCLE NO TO L12 AND MOVE TO L13

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

LIFETIME

L12 a ARE 1 OR MORE « b » QUESTIONS FROM L1b TO L7b CODED **YES OR YES BIZARRE** AND IS EITHER:

MAJOR DEPRESSIVE EPISODE, (CURRENT)
OR
MANIC OR HYPOMANIC EPISODE, (CURRENT) CODED **YES**?

IF THE ANSWER IS YES TO THIS DISORDER (LIFETIME OR CURRENT), CIRCLE NO TO L13 AND L14 AND MOVE TO THE NEXT MODULE.

NO **YES**

MOOD DISORDER WITH *PSYCHOTIC FEATURES*

CURRENT

L13 ARE 1 OR MORE « b » QUESTIONS FROM L1b TO L6b, CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « b » QUESTIONS FROM L1b TO L10b, CODED **YES** (RATHER THAN **YES BIZARRE**)?

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?

NO **YES**

PSYCHOTIC DISORDER
CURRENT

L14 IS **L13** CODED **YES**

OR

ARE 1 OR MORE « a » QUESTIONS FROM L1a TO L6a, CODED **YES BIZARRE**?

OR

ARE 2 OR MORE « a » QUESTIONS FROM L1a TO L7a, CODED **YES** (RATHER THAN **YES BIZARRE**)

AND DID AT LEAST TWO OF THE PSYCHOTIC SYMPTOMS OCCUR DURING THE SAME 1 MONTH PERIOD?

NO **YES**

PSYCHOTIC DISORDER
LIFETIME

Psychiatric University Hospital Zurich, P.O. Box 1931, CH-8032 Zurich, Switzerland *27.12.2007*

Psychiatric University Hospital Zurich, Division of Clinical Psychiatry

POSITIVE AND NEGATIVE SYNDROME SCALE

P A N S S

S.R. Kay, A. Fiszbein, L.A. Opler

STUDY	[_ _ _ _]	1-4
GROUP	[_ _]	5-6
PATIENT	[_ _ _]	7-9
RATING DAY	[_ _ _]	10-12
CARD NUMBER	[_ _]	13-14
Sex (1=male, 2=female)	[_]	15
Birthday (dd.mm.yy)	[_ _ : _ _ : _ _]	16-21
Date of hospitalization (dd.mm.yy)	[_ _ : _ _ : _ _]	22-27
First diagnosis	[_ _ _ . _ _]	28-32
Second diagnosis	[_ _ _ . _ _]	33-37
Diagnostic system (1=ICD9, 2=ICD10, 3=DSM3-R, 4=DSM4)	[_]	38
Age at onset	[_ _]	39-40
Course (1=first manifestation, 2=intermittent, 3=progredient, 4=chronic)	[_]	41
Duration of Current Episode Prior to Hospitalization (days)	[_ _ _]	42-44
Medication Prior to Hospitalization (0=none, 1=antidepr., 2=neuroleptics, 3=other)	[_]	45
Current Medication (cf. list of codes)	[_ _ _]	46-48
Educational level (1=remedial, 2=junior high, 3=high, 4=college)	[_]	49
DATE (dd.mm.yy)	[_ _ : _ _ : _ _]	50-55
INTERVIEWER	[_ _ _]	56-58
HOSPITAL	[_ _]	59-60
PATIENT ID (the hospital's internal PID)	[_ _ _ _ _ _ _ _ _ _ _ _]	61-72

0=Absent 1=Minimal 2=Mild 3=Moderate 4=Moderate severe 5=Severe 6=Extreme

1-12 dupl

CARD NUMBER [_ _] 13-14

POSITIVE SCALE (P)

P1 Delusions [_] 15
Beliefs which are unfounded, unrealistic, and idiosyncratic. Basis for rating: Thought content expressed in the interview and its influence on social relations and behavior.

P2 Conceptual disorganization [_] 16
Disorganized process of thinking characterized by disruption of goal-directed sequencing, e.g., circumstantiality, tangentiality, loose associations, non sequiturs, gross illogicality, or thought block. Basis for rating: Cognitive-verbal processes observed during the course of interview.

P3 Hallucinatory behavior [_] 17
Verbal report or behavior indicating perceptions which are not generated by external stimuli. These may occur in the auditory, visual, olfactory, or somatic realms. Basis for rating: Verbal report and physical manifestations during the course of interview as well as reports of behavior by primary care workers or family.

P4 Excitement [_] 18
Hyperactivity as reflected in accelerated motor behavior, heightened responsivity to stimuli, hypervigilance, or excessive mood lability. Basis for rating: Behavioral manifestations during the course of interview as well as reports of behavior by primary care workers or family.

P5 Grandiosity [_] 19
Exaggerated self-opinion and unrealistic convictions of superiority, including delusions of extraordinary abilities, wealth, knowledge, fame, power, and moral righteousness. Basis for rating: Thought content expressed in the interview and its influence on behavior.

P6 Suspiciousness/persecution [_] 20
Unrealistic and exaggerated ideas of persecution, as reflected in guardedness, a distrustful attitude, suspicious hypervigilance, or frank delusions that others mean one harm. Basis for rating: Thought content expressed in the interview and its influence on behavior.

P7 Hostility [_] 21
Verbal and nonverbal expressions of anger and resentment, including sarcasm, passive-aggressive behavior, verbal abuse, and assaultiveness. Basis for rating: Interpersonal behavior observed during the interview and reports by primary care workers or family.

NEGATIVE SCALE (N)

N1 Blunted affect [_] 22
Diminished emotional responsiveness as characterized by a reduction in facial expression, modulation of feelings, and communicative gestures. Basis for rating: Observation of physical manifestations of affective tone and emotional responsiveness during the course of interview.

N2 Emotional withdrawal [_] 23
Lack of interest in, involvement with, and affective commitment to life's events. Basis for rating: Reports of functioning from primary care workers or family and observation of interpersonal behavior during the course of interview.

N3 Poor rapport [_] 24
Lack of interpersonal empathy, openness in conversation, and sense of closeness, interest, or involvement with the interviewer. This is evidenced by interpersonal distancing and reduced verbal and nonverbal communication. Basis for rating: Interpersonal behavior during the course of interview.

0=Absent 1=Minimal 2=Mild 3=Moderate 4=Moderate severe 5=Severe 6=Extreme

N4 Passive/apathetic social withdrawal [_] 25
Diminished interest and initiative in social interactions due to passivity, apathy, anergy, or avolition. This leads to reduced interpersonal involvements and neglect of daily activities.

N5 Difficulty in abstract thinking [_] 26
Impairment in the use of the abstract-symbolic mode of thinking, as evidenced by difficulty in classification, forming generalizations, and proceeding beyond concrete or egocentric thinking in problem-solving tasks. Basis for rating: Responses to questions on similarities and proverb interpretation, and use of concrete vs. abstract mode during the course of interview.

N6 Lack of spontaneity and flow of conversation [_] 27
Reduction in the normal flow of communication associated with apathy, avolition, defensiveness, or cognitive deficit. This is manifested by diminished fluidity and productivity of the verbal-interactional process. Basis for rating: Cognitive-verbal processes observed during the course of interview.

N7 Stereotyped thinking [_] 28
Decreased fluidity, spontaneity, and flexibility of thinking, as evidenced in rigid, repetitious, or barren thought content. Basis for rating: Cognitive-verbal processes during the course of interview.

GENERAL PSYCHOPATHOLOGY SCALE (G)

G1 Somatic concern [_] 29
Physical complaints or beliefs about bodily illness or malfunctions. This may range from a vague sense of ill being to clear-cut delusions of catastrophic physical disease. Basic for rating: Thought content expressed in the interview.

G2 Anxiety [_] 30
Subjective experience of nervousness, worry, apprehension, or restlessness, ranging from excessive concern about the present or future to feelings of panic. Basis for rating: Verbal report during the course of interview and corresponding physical manifestations.

G3 Guilt feelings [_] 31
Sense of remorse or self-blame for real or imagined misdeeds in the past. Basis for rating: Verbal report of guilt feelings during the course of interview and the influence on attitudes and thoughts.

G4 Tension [_] 32
Overt physical manifestations of fear, anxiety, and agitation, such as stiffness, tremor, profuse sweating, and restlessness. Basis for rating: Verbal report attesting to anxiety and, thereupon, the severity of physical manifestations of tension observed during the interview.

G5 Mannerisms and posturing [_] 33
Unnatural movements or posture as characterized by an awkward, stilted, disorganized, or bizarre appearance. Basis for rating: Observation of physical manifestations during the course of interview as well as reports from primary care workers or family.

G6 Depression [_] 34
Feelings of sadness, discouragement, helplessness, and pessimism. Basis for rating: Verbal report of depressed mood during the course of interview and its observed influence on attitude and behavior.

G7 Motor retardation [_] 35
Reduction in motor activity as reflected in slowing or lessening of movements and speech, diminished responsiveness to stimuli, and reduced body tone. Basis for rating: manifestations during the course of interview as well as reports by primary care workers or family.

G8 Uncooperativeness [_] 36
Active refusal to comply with the will of significant others, including the interviewer, hospital staff, or family, which may be associated with distrust, defensiveness, stubbornness, negativism, rejection of authority, hostility, or belligerence. Basis for rating: Interpersonal behavior observed during the course of interview as well as reports by primary care workers or family.

G9 Unusual thought content [_] 37
Thinking characterized by strange, fantastic, or bizarre ideas, ranging from those which are remote or atypical to those which are distorted, illogical, and patently absurd. Basis for rating: Thought content expressed during the course of interview.

G10 Disorientation [_] 38
Lack of awareness of one's relationship to the milieu, including persons, place, and time, which may be due to confusion or withdrawal. Basis for rating: Responses to interview questions on orientation.

G11 Poor attention [_] 39
Failure in focused alertness manifested by poor concentration, distractibility from internal and external stimuli, and difficulty in harnessing, sustaining, or shifting focus to new stimuli. Basis for rating: Manifestations during the course of interview.

G12 Lack of judgment and insight [_] 40
Impaired awareness or understanding of one's own psychiatric condition and life situation. This is evidenced by failure to recognize past or present psychiatric illness or symptoms, denial of need for psychiatric hospitalization or treatment, decisions characterized by poor anticipation of consequences, and unrealistic short-term and long-range planning. Basis for rating: Thought content expressed during the interview.

G13 Disturbance of volition [_] 41
Disturbance in the willful initiation, sustenance, and control of one's thoughts, behavior, movements, and speech. Basis for rating: thought content and behavior manifested in the course of interview.

G14 Poor impulse control [_] 42
Disordered regulation and control of action on inner urges, resulting in sudden, unmodulated, arbitrary, or misdirected discharge of tension and emotions without concern about consequences. Basis for rating: Behavior during the course of interview and reported by primary care workers or family.

G15 Preoccupation [_] 43
Absorption with internally generated thoughts and feelings and with autistic experiences to the detriment of reality orientation and adaptive behavior. Basis for rating: Interpersonal behavior observed during the course of interview.

G16 Active social avoidance [_] 44
Diminished social involvement associated with unwarranted fear, hostility, or distrust. Basis for rating: Reports of social functioning by primary care workers or family.

FORMALE DENKSTÖRUNGEN

Z1 Verschwommenes Denken [_] 45
Die Begriffe sind unscharf und vage, die Äusserungen sind in grösseren Zusammenhängen nicht verständlich. Ein vager thematischer Zusammenhang bleibt erkennbar, Themenwechsel vollziehen sich durch allmähliches Entgleiten des bisherigen Themas. Typisch finden sich auch Vorbeireden, Kontaminationen, Verschiebungen und Substitutionen sowie Neologismen.

Z2 Sprunghaftes Denken [_] 46
Das Denken ist assoziativ gelockert, es treten zahlreiche, den Sinnzusammenhang durchbrechende Gedankensprünge auf, so dass der Eindruck einer bei jedem Einfall wechselnden Denkrichtung entsteht.

Appendix I : Premorbid Adjustment Scale with modifications

Instructions

This scale is designed to measure **only premorbid functioning,** where "premorbid" is defined as the period ending **12 months** before evidence of characteristic florid psychotic symptomatology.

Only chose life periods that are **premorbid** by this definition should be rated on this scale, regardless of the present age of the subject (e.g., a 39•year•old who had his first psychotic episode at age 17 would not be rated on the adult section, but would be rated on all other sections including the general section). In order to determine if a particular section should be scored, the onset date recorded in the chart should be consulted. If the individual showed signs of psychotic symptoms less than 12 months prior **to** this date, the section corresponding to this time frame should not be scored because it does not fall under the "premorbid period."

Scoring

Items are rated from 0 to 6. If it is impossible to rate an item, it should be marked as N/A (not available) on the scoring sheet. The possible score indicates the highest score obtainable by adding the maximum score for all items **completed (e.g.,** if a subject receives ratings of 2. 3, 3 and 2 for the 4 items in the childhood section, the total score is 10. The possible score is 6 + 6 + 6 + 6 = 24. The total score divided by the possible score is 0.42). The score for any one section is expressed as a total score divided by possible score for the items rated. If only 3 items could be rated, then the possible score would be 18 (6 + 6 + 6), the total score would be 8 (2 + 3 + 3) and the section score 0.44.

The overall score is obtained by averaging all the subscale scores.

When scoring particular items, the patient need not meet oil criteria set out in the anchor points. For example, on item I (sociability and withdrawal), the anchor point given for a score of 4, a patient must show moderate withdrawal. Daydreaming and excessive fantasy are offered in **the** anchor point to suggest the types of behavior that might be exhibited by an individual who would receive this score. It is important to remember, however, that these are simply guidelines, and the individual is not required to meet all of the criteria offered in the anchor point in order to receive that score.

Appendix 1 cont.

Childhood (up through age 11)

1. Sociability and withdrawal
- 0 - Not withdrawn, actively and frequently seeks out social contacts
- 2 - Mild withdrawal, enjoys socialization when involved, occasionally seeks opportunities to socialize
- 4 - Moderately withdrawn, given to daydreaming and excessive fantasy, may passively allow self to be drawn into contact with others, but does not seek it
- 6 - Unrelated to others, withdrawn and isolated, avoids contacts

2. Peer relationships
- 0 - Many friends (*more than 5*), close relationships ("*best friends*" *or people you could confide in*) with several
- 1 - *2–5 friends*
- 2 - Close relationships with a few friends (1 or 2), casual friendships with others
- 3 - *Only casual friends*
- 4 - Deviant (*unusual*) friendship patterns: friendly with children younger or older only, or relatives only, or casual relationships only
- 6 - Social isolate, no friends, not even superficial relationships

3. Scholastic performance (*as compared with all other students that age in the general population [i.e., a student doing very well in a special needs school would rate no higher than a 4]*)
- 0 - Excellent student (*straight A's – likely to attend a post-secondary institution*)
- 1 - *A's and B's* (*likely to pursue post-secondary studies*)
- 2 - Good student (*B's – post-secondary*)
- 3 - *Average student* (*B's and C's*)
- 4 - Fair student (*C's*)
- 5 - *D's – failing some classes*
- 6 - Failing all classes

4. Adaptation to school
- 0 - Good adaptation, enjoys school, no or rare discipline problems, has friends at school, likes most teachers
- 1 - *Likes school, few discipline problems*
- 2 - Fair adaptation, occasional discipline problems, not very interested in school, but no truancy or rare. Has friends in school, but does not often take part in extracurricular activities
- 3 - *Sometimes truant*
- 4 - Poor adaptation, dislikes school, frequent truancy, frequent discipline problem (*may have been suspended*)
- 5 - *Expelled from school*
- 6 - Refuses to have anything to do with school — delinquency or vandalism directed against school

Early adolescence (12–15 years of age)

1. Sociability and withdrawal
- 0 - Not withdrawn
- 2 - Mild withdrawal, enjoys socialization when involved, occasionally seeks opportunities to socialize
- 4 - Moderately withdrawn, given to daydreaming and excessive fantasy, may passively allow self to be drawn into contact with others, but does not seek it
- 6 - Unrelated to others, withdrawn and isolated, avoids contact

2. Peer relationships
- 0 - Many friends (*more than 5*), close relationships ("*best friends*" *or people you could confide in*) with several
- 1 - *2–5 friends*
- 2 - Close relationships with a few friends (1 or 2), casual friendships with others
- 3 - *Only casual friends*
- 4 - Deviant (*unusual*) friendship patterns: friendly with children younger or older only, or relatives only, or casual relationships only
- 6 - Social isolate, no friends, not even superficial relationships

3. Scholastic performance (*as compared with all other students that age in the general population [i.e., a student doing very well in a special needs school would rate no higher than a 4]*)
- 0 - Excellent student (*straight A's – likely to attend a post-secondary institution*)
- 1 - *A's and B's* (*likely to pursue post-secondary studies*)
- 2 - Good student (*B's – post-secondary*)
- 3 - *Average student* (*B's and C's*)
- 4 - Fair student (*C's*)
- 5 - *D's – failing some classes*
- 6 - Failing all classes

4. Adaptation to school
- 0 - Good adaptation, enjoys school, no or rare discipline problems, has friends at school, likes most teachers
- 1 - *Likes school, few discipline problems*
- 2 - Fair adaptation, occasional discipline problems, not very interested in school, but no truancy or rare. Has friends in school, but does not often take part in extracurricular activities
- 3 - *Sometimes truant*
- 4 - Poor adaptation, dislikes school, frequent truancy, frequent discipline problem (*may have been suspended*)
- 5 - *Expelled from school*
- 6 - Refuses to have anything to do with school — delinquency or vandalism directed against school

5. Social-sexual aspects of life during early adolescence
- 0 - Started dating, showed a "healthy interest" in the opposite sex, may have gone "steady," may include some sexual activity
- 1 - Attachment and interest in others, may be same-sex attachments, may be a member of a group, interested in the opposite sex, although may not have close, emotional relationship with someone of the opposite sex, "crushes" and flirtations
- 2 - Consistent deep interest in same-sex attachments with restricted or no interest in the opposite sex
- 3 - Casual same-sex attachments with inadequate attempts at relationships with the opposite sex. Casual contacts with both sexes
- 4 - Casual contacts with the same sex, no interest in the opposite sex
- 5 - A loner, no or rare contacts with either boys or girls
- 6 - Antisocial, avoids and avoided by peers (differs from above in that an active avoidance of others rather than a passive withdrawal is implied)

Appendix 1 cont.

Late adolescence (16–18 years of age)

1. Sociability and withdrawal

0 - Not withdrawn
2 - Mild withdrawal, enjoys socialization when involved, occasionally seeks opportunities to socialize
4 - Moderately withdrawn, given to daydreaming and excessive fantasy, may passively allow self to be drawn into contact with others, but does not seek it
6 - Unrelated to others, withdrawn and isolated, avoids contact

2. Peer relationships

0 - Many friends (*more than 5*), close relationships (*"best friends" or people you could confide in*) with several
1 - *2–5 friends*
2 - Close relationships with a few friends (1 or 2), casual friendships with others
3 - *Only casual friends*
4 - Deviant (*unusual*) friendship patterns: friendly with children younger or older only, or relatives only, or casual relationships only
6 - Social isolate, no friends, not even superficial relationships

3. Scholastic performance (*as compared with all other students that age in the general population [i.e., a student doing very well in a special needs school would rate no higher than a 4]*)

0 - Excellent student (*straight A's – likely to attend a post-secondary institution*)
1 - *A's and B's (likely to pursue post-secondary studies)*
2 - Good student (*B's – post-secondary*)
3 - *Average student (B's and C's)*
4 - Fair student (*C's*)
5 - *D's – failing some classes*
6 - Failing all classes

4. Adaptation to school

0 - Good adaptation, enjoys school, no or rare discipline problems, has friends at school, likes most teachers
1 - *Likes school, few discipline problems*
2 - Fair adaptation, occasional discipline problems, not very interested in school, but no truancy or rare. Has friends in school, but does not often take part in extracurricular activities
3 - *Sometimes truant*
4 - Poor adaptation, dislikes school, frequent truancy, frequent discipline problem (*may have been suspended*)
5 - *Expelled from school*
6 - Refuses to have anything to do with school — delinquency or vandalism directed against school

5. Social-sexual aspects of life during early adolescence

0 - Always showed a "healthy interest" in the opposite sex, dating, has gone "steady," has engaged in some sexual activity (not necessarily intercourse)
1 - Dated regularly. Had only one friend of the opposite sex with whom the subject went "steady" for a long time. (Includes sexual aspects of a relationship, although not necessarily intercourse; implies a twosome, pairing off into couples as distinguished from below)
2 - Always mixed closely with boys and girls. (Involves membership in a crowd, interest in and attachment to others, no couples)
3 - Consistent deep interest in same-sex attachments with restricted or no interest in the opposite sex
4 - Casual same-sex attachments with inadequate attempts at adjustment to going out with the opposite sex. Casual contacts with both sexes
5 - Casual contacts with the same sex, with a lack of interest in the opposite sex. Occasional contacts with the opposite sex
6 - No desire to be with boys and girls, never went out with the opposite sex

Adulthood (age 19 and above)

1. Sociability and withdrawal

0 - Not withdrawn, actively and frequently seeks out social contact
2 - Mild withdrawal, enjoys socialization when involved, occasionally seeks opportunities to socialize
4 - Moderately withdrawn, given to daydreaming and excessive fantasy, may passively allow self to be drawn into contact with others, but does not seek it
6 - Unrelated to others, withdrawn and isolated, avoids contact

2. Peer relationships

0 - Many friends (*more than 5*), close relationships (*"best friends" or people you could confide in*) with several
1 - *2–5 friends*
2 - Close relationships with a few friends (1 or 2), casual friendships with others
3 - *Only casual friends*
4 - Deviant (*unusual*) friendship patterns: friendly with children younger or older only, or relatives only, or casual relationships only
6 - Social isolate, no friends, not even superficial relationships

3. Aspects of adult social-sexual life

A. Married presently or formerly

0 - Married, only one marriage (or remarried as a result of death of spouse), living as a unit, adequate sexual relations
1 - Currently married with a history of low sexual drive, periods of difficult sexual relations, or extramarital affair
1 - Married more than one time, currently remarried. Adequate sexual relations during at least one marriage
2 - Married, or divorced and remarried, with chronically inadequate sex life
2 - Married and apparently permanently separated or divorced without remarriage, but maintained a home in one marriage for at least 3 years
3 - Same as above, but divorce occurred over 3 years ago and while married, maintained a home for less than 3 years

B. Never married, over 30 years of age

2 - Has been engaged one or more times or has had a long-term relationship (at least 2 years) involving heterosexual or homosexual relations, or apparent evidence of a love affair with one person, but unable to achieve a long-term commitment such as marriage
3 - Long-term heterosexual or homosexual relationship lasting over 6 months, but less than 2 years
4 - Brief or short-term dating experiences (heterosexual or homosexual) with one or more partners, but no long-lasting sexual experience with a single partner
5 - Sexual and/or social relationships rare or infrequent

6 - Minimal sexual or social interest in either men or women, isolated

C *Never married, age 19 29 years*

- Has had at least one long-term love affair (minimum 6 months) or engagement, even though religious or other prohibitions or inhibitions may have prevented actual sexual union. May have lived together

I - Has dated actively, had several "boyfriends" or "girlfriends." Some relationships have lasted a few months, but no long-term relationships. Relationships may have been serious but a long-term commitment such as marriage was not understood to be an eventuality

3 • Brief or short-term dating experiences or affairs with one or more partners, but no long-lasting sexual experience with a single partner

4 - Casual sexual or social relationships with persons of either sex with no deep emotional bonds

5 - Sexual and/or social relationships rare or infrequent

6 - Minimal sexual or social interest in either men or women, isolated

General

I. Education

0 - Completed college and/or graduate school or professional school

I - Completed high school and some college or vocational training or business school

2 - Completed high school

4 - Completed grade 8

6 - Did not get beyond grade 5

2. During a period of 3 years up to 6 months before first hospitalization or onset of first episode, patient was employed for pay or functioning in school

- All the time

2 - Half the time

4 - Briefly, about 25% of the time

6 Never

3. Within a period of I year up to 6 months before first hospitalization or onset of first episode, change in work or school performance occurred

- Abruptly

2 - Within 3 months

4 - Within 6 months

6 Imperceptibly, difficult or not possible to determine onset of deterioration

4. During a period of 3 years up to 6 months before first hospitalization or onset of first episode, frequency of job change, if working, or interruption of school attendance was:

- Same job held or remained in school

2 - Job change or school interruption occurred 2-3 times

4 - Kept the same job for more than 8 months, but less than I year, or remained in school continuously for the same period 6- Less than 2 weeks at a job or in school

S. Establishment of independence

- Successfully established residence away from family home, financially independent of parents

2 - Made unsuccessful attempts to establish independent residence, lives in parents' home but pays room and board, otherwise financially

independent

4 - Lives in parents' home, receives an allowance from parents

which subject budgets to pay for entertainment, clothes, etc. 6 - Made no attempt to leave home or be financially independent

6. Global assessment of highest level of functioning achieved in subject's life

0 - Fully able to function successfully in and take pleasure from (l) school or job; (2) friends; (3) intimate sexual relationships; (4) church, hobbies etc. Enjoys life and copes with it well

2 - Able to function well and enjoys some spheres of life, but has a definite lack of success in at least one area

4 - Minimum success and pleasure in 3 areas of life

6 - Unable to function in or enjoy any aspect of life

7. Social-personal adjustment (based on most recent period of good functioning)

0 - A leader or officer in formally designated groups, clubs, organizations or athletic teams in senior high school, vocational school, college or young adulthood. Involved in intimate close relationships with others

I An active and interested participant, but did not play a leading role in groups of friends, clubs, organizations or athletic teams. Was involved in close relationships with others also.

2 A nominal member but had no involvement in or commitment

to groups of friends, clubs, organizations. etc. Had close relationships with a few friends

3 - From adolescence through early adulthood had a few casual friends

4 - From adolescence through early adulthood had no real friends, only superficial relationships

5 • From adolescence through early adulthood, quiet, reclusive, preferred to be by self, minimal efforts to maintain any contact at all with others

6 - No desire to be with peers or others. Either asocial or antisocial

8. Degree of interest in life

0 - Keen, ambitious interest in some of the following: home, family. friends, work, sports, art, pets, gardening, social activities, music and drama

2 - Moderate degree of interest in several activities including social gatherings, sports. music and the opposite sex

4 - Mild interest in a few things such as job, family, quiet social gatherings. The interest is barely sustaining

6- Withdrawn and indifferent toward life interests of average individual. No deep interests of any sort

9. Energy level

0 - Strong drive, keen, active, alert, interest in *life.* Liked life and had enough energy to enjoy it. Outgoing and adequate in meeting life

2 — Moderately adequate drive, energy, interest as described above

4 - Moderately inadequate energy level. Tended toward submissive. passive reactions. Showed some potential to face life's

problems, but would rather avoid them than expend the necessary energy

6 - Submissive, inadequate, passive reactions. Weak grasp on life, does not go out to meet life's problems, does not participate actively, but passively accepts his lot without having the energy to help self

INSTITUTIONAL ETHICAL COMMITTEE, STANLEY MEDICAL COLLEGE, CHENNAI-1

Title of the Work : A Study of Premorbid Adjustment, clinical variables in First Episode Psychosis in a tertiary care Hospital.

Principal Investigator : Dr. R Nirmal

Designation : PG in MD (Psychiatry)

Department : Department of Psychiatry
Government Stanley Medical College,
Chennai-01

The request for an approval from the Institutional Ethical Committee (IEC) was considered on the IEC meeting held on 02.07.2014 at the Council Hall, Stanley Medical College, Chennai-1 at 2PM

The members of the Committee, the secretary and the Chairman are pleased to approve the proposed work mentioned above, submitted by the principal investigator.

The Principal investigator and their team are directed to adhere to the guidelines given below:

1. You should inform the IEC in case of changes in study procedure, site investigator investigation or guide or any other changes.
2. You should not deviate from the area of the work for which you applied for ethical clearance.
3. You should inform the IEC immediately, in case of any adverse events or serious adverse reaction.
4. You should abide to the rules and regulation of the institution(s).
5. You should complete the work within the specified period and if any extension of time is required, you should apply for permission again and do the work.
6. **You should submit the summary of the work to the ethical committee on completion of the work.**

Vasantha

MEMBER SECRETARY,
IEC, SMC, CHENNAI

சுய ஒப்புதல் படிவம்

ஆராய்ச்சி நிலையம் : அரசு ஸ்டான்லி மருத்துவமனை
சென்னை - 600 001.

பங்கு பெறுபவரின் பெயர் :

பங்கு பெறுபவரின் எண் :

நோயாளி இதனை (✓) குறிக்கவும்.

மேலே குறிப்பிடப்பட்டுள்ள மருத்துவ ஆய்வின் விவரங்கள் எனக்கு விளக்கப்பட்டது. என்னுடைய சந்தேகங்களை கேட்கவும். அதற்கான தகுந்த விளக்கங்களை பெறவும் வாய்ப்பளிக்கப்பட்டது. ☐

நான் / என் உறவினர் இவ்வாய்வில் தன்னிச்சையாக்தான் பங்கேற்கிறேன். எந்த காரணத்தினாலோ எந்த கட்டத்திலும் எந்த சட்ட சிக்கலுக்கும் உட்படாமல் நான் / என் உறவினர் இவ்வாய்வில் இருந்து விலகி கொள்ளலாம் என்றும் அறிந்து கொண்டேன். ☐

இந்த ஆய்வு சம்பந்தமாகவோ, இதை சார்ந்த மேலும் ஆய்வு மேற்கொள்ளும் போதும் இந்த ஆய்வில் பங்குபெறும் மருத்துவர் என்னுடைய மருத்துவ அறிக்கைகளை பார்ப்பதற்கு என் அனுமதி தேவையில்லை என அறிந்து கொள்கிறேன். நான் / என் உறவினர் ஆய்வில் இருந்து விலகிக் கொண்டாலும் இது பொருந்தும் என அறிகிறேன். ☐

இந்த ஆய்வின் மூலம் கிடைக்கும் தகவல்களையும், பரிசோதனை முடிவுகளையும் மற்றும் சிகிச்சை தொடர்பான தகவல்களையும் மருத்துவர் மேற்கொள்ளும் ஆய்வில் பயன்படுத்திக் கொள்ளவும் அதை பிரசுரிக்கவும் என் முழு மனதுடன் சம்மதிக்கிறேன். ☐

இந்த ஆய்வில் பங்கு கொள்ள ஒப்புக்கொள்கிறேன் எனக்கு கொடுக்கப்பட்ட அறிவுரைகளின்படி நடந்து கொள்வதுடன் இந்த ஆய்வை மேற்கொள்ளும் மருத்துவ அணிக்கு உண்மையுடன் இருப்பேன் என்றும் உறுதி அளிக்கிறேன். என் உடல்நலம் பாதிக்கப்பட்டாலோ அல்லது எதிர்பாராத வழக்கத்திற்கு மாறான நோய் குறி தென்பட்டாலோ உடனே அதனை மருத்துவ அணிக்கு தெரிவிப்பேன் என உறுதி அளிக்கிறேன். ☐

இந்த ஆய்வில் எனக்கு இரத்தம், சிறுநீர், எக்ஸரே, ஸ்கேன் (MRI Scan), E.E.G உட்பட அனைத்து பரிசோதனைகளையும் செய்து கொள்ள நான் முழு மனதுடன் சம்மதிக்கிறேன். ☐

பங்கேற்பவரின் / உறவினரின் கையொப்பம் ..... இடம் ..... தேதி
கட்டைவிரல் ரேகை

பங்கு பெறுபவரின் பெயர் மற்றும் விலாசம், ...

.....

ஆய்வாளரின் கையொப்பம் ..... இடம் ..... தேதி

ஆய்வாளரின் பெயர் .....

நோயாளியின் பெயர் ..... பாலினம் ஆண் ..... பெண் .....

வயது ..... வருடங்கள் அல்லது பிறந்த தேதி .....

நோயாளியை தொடர்பு கொள்ளும் முகவரி .....

.....

.....

நோயாளியின் தொலைபேசி எண்.

நோயாளியின் தந்தை / கணவர் / உறவினர் பெயர் .....

		பங்கேற்பவரின் கையொப்பம்/பெருவிரல் பதிப்பு
1)	மேல் குறிப்பிடப்பட்டுள்ள ஆய்வின் ..... தேதியிட்ட நோயாளிகளுக்கான செய்தி நான் படித்திருக்கிறேன் மற்றும் புரிந்திருக்கிறேன்/ விவரிக்கப்பட்டுள்ளேன். கேள்விகள் கேட்கவும் அனுமதி வழங்கப்பட்டுள்ளேன் என நான் உறுதி செய்கிறேன்.	
2)	இந்த ஆய்வில் பங்கேற்பது என் / என் உறவினரின் சொந்த விருப்பப்படியே என நான் அறிந்திருக்கிறேன். மேலும் என் / என் உறவினரின் மருத்துவ சிகிச்சை கவனிப்பு அல்லது சட்ட பூர்வ உரிமைகளுக்கு பாதிப்பு ஏற்படாமல் நான் எந்த நேரத்திலும் விலகிக் கொள்ளலாம் என்பதை அறிந்திருக்கிறேன்.	
3)	எத்திக்ஸ் கமிட்டி மற்றும் ரெகுலேட்டரி அதாரிட்டிஸ்க்கும் நான் இந்த ஆய்விலிருந்து விலகினாலும் தற்போதைய மற்றும் எதிர்கால இந்த ஆய்வு சார்ந்த என் / என் உறவினர் உடல்நல குறிப்புகளை என் அனுமதியின்றி பார்க்க முடியும் என நான் அறிகிறேன்.	
4)	இந்த ஆய்வில் கிடைக்கப்பெறும் குறிப்புகள் மற்றும் முடிவுகளை உபயோகப்படுத்த தடை செய்ய மாட்டேன் என சம்மதிக்கிறேன். ஆனால் அவைகள் விஞ்ஞானம், ஆராய்ச்சி கட்டுரைகள் போன்ற சம்மந்தப்பட்டவைகளுக்கு பயன் உள்ளதாக இருக்க வேண்டும்.	
5)	மேற்கூறிய ஆய்வில் பங்கேற்க நான் சம்மதிக்கிறேன்.	

ஆய்வில் பங்கேற்பவர் / சட்டபூர்வமாக
ஏற்கப்பட்ட நபர் கையொப்பம் அல்லது
பெருவிரல் பதிவு

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
NAME	age1	AGE	SEX	RESIDENCE	EDUCATI(	INFORMANT-	OCCUPATION	MARITAL STTATUS	S E STATUS	FAMILYHIO	PATHWAYTC	ONSETOF PSYCI	DUP(WE	DUP	DIAGNOS
thangam	50	4	2	2	2	3	1	2	4	2	2	45	104	3	5
kesavan	34	3	1	3	1	2	4	2	5	2	2	33	21	2	5
srnivasa	32	3	1	1	3	1	3	1	4	2	3	32	4	1	3
krishnam	24	2	1	1	3	2	2	1	4	2	2	23	104	3	4
agasthi	32	3	2	1	4	1	1	3	5	2	1	26	312	3	5
govindan	48	4	2	1	5	2	2	3	4	1	3	47	52	3	6
govindar	33	3	1	1	4	5	3	2	3	2	3	29	208	3	2
jeyakuma	26	2	1	1	5	3	3	1	3	2	3	25	21	2	4
lakshmid	38	3	2	1	4	5	1	1	3	2	1	38	17	2	1
perumal	50	4	1	1	3	5	2	1	4	2	1	40	521	3	1
gunasun	46	4	2	1	1	4	1	3	3	1	2	36	521	3	1
saralaku	33	3	2	1	4	1	2	1	5	2	2	27	312	3	4
hameshk	35	3	1	1	5	2	1	4	3	2	3	32	260	3	1
muniyam	37	3	2	3	2	1	3	2	4	2	4	37	4	1	5
suresh	22	2	1	2	7	2	1	1	4	2	2	22	104	3	4
suresh	34	3	1	2	5	2	1	1	3	1	3	30	208	3	1
kannan	17	1	1	1	5	3	1	1	3	1	6	16	52	3	1
poongav	40	3	2	3	3	2	1	2	4	2	2	40	52	3	3
mariappa	30	2	1	1	4	2	3	1	4	2	6	30	52	3	1
vigneshw	21	2	1	2	6	3	1	1	4	1	6	18	156	3	1
dhatchay	47	4	1	2	2	5	1	3	4	2	2	47	13	2	2
sreelaks	30	2	2	2	4	2	1	4	3	2	6	30	26	2	5
sujatha	43	4	2	1	5	3	1	2	2	1	6	43	13	2	2
sentamil	33	3	1	1	2	4	4	2	4	1	6	33	104	3	1
maheshw	34	3	1	1	5	3	4	2	4	1	2	34	156	3	1
ajith	25	2	1	1	4	2	1	1	5	2	3	25	2	1	5
yesudoss	32	3	1	1	5	3	3	1	4	2	3	26	260	3	4
mariyamb	34	3	2	1	1	1	2	1	3	2	3	34	4	1	3
sadikali	23	2	1	1	5	3	2	1	3	1	2	23	3	1	3
baskaran	24	2	1	2	5	2	3	1	4	2	4	24	104	3	1
jayapaul	34	3	1	1	3	1	3	5	5	1	2	27	156	3	1
rajendra	26	2	1	1	2	1	2	1	3	1	6	25	52	3	4
maheshw	42	4	2	1	3	5	3	2	4	1	1	32	26	2	1
anitha	21	2	2	2	5	3	1	1	3	2	2	18	156	3	1
saralade	41	4	2	1	3	5	1	2	3	2	3	41	26	2	5

Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
POSITIVESCA	NEGATIVESCAL	GENERA	POSITIV	NEGATIVES	GENERALPSY	%REDN +	%REDN NEGA	% REDN GE	AVERAGE REDN PA	6to11	12to15	16to18	>19	marriage	generals	PREM	SOCIALD	ACADEMI
9	17	23	8	13	19	11	23	18	17	0.08	0.08	0.17	0.17	0	0.33	0.1	0.13	0.11
10	12	27	7	9	20	30	25	25	27	0.17	0.17	0.17	0.42	0	0.26	0.2	0.23	0.17
13	15	21	8	10	18	40	40	15	32	0.08	0.08	0.08	0.17	0.5	0.33	0.2	0.1	0.08
10	23	25	8	20	22	20	14	12	15	0.36	0.42	0.67	0.83	0.67	0.73	0.6	0.57	0.48
11	13	21	9	10	18	18	24	15	20	0.25	0.33	0.25	0.75	0.67	0.78	0.5	0.4	0.28
8	20	20	7	12	18	12	40	10	21	0.17	0.17	0.33	0.33	0.67	0.24	0.3	0.25	0.22
20	19	29	10	13	20	50	32	32	38	0.33	0.46	0.67	0.84	0	0.48	0.5	0.58	0.49
8	16	30	8	11	22	0	32	34	22	0.29	0.33	0.46	0.67	0.5	0.59	0.4	0.44	0.36
18	17	39	13	11	32	28	34	18	27	0.2	0.42	0.5	0.58	1	0.7	0.6	0.43	0.37
22	14	38	17	11	31	23	22	18	21	0.29	0.17	0.42	0.33	1	0.48	0.5	0.3	0.29
18	10	28	13	8	25	28	20	10	19	0.08	0.42	0.42	0.5	0.67	0.56	0.4	0.36	0.31
8	22	24	8	15	19	0	32	21	18	0.29	0.5	0.42	0.58	1	0.57	0.6	0.45	0.4
10	26	28	7	11	16	30	58	43	44	0.17	0.29	0.46	0.67	0.67	0.48	0.5	0.4	0.31
14	8	20	9	8	17	36	0	15	17	0.29	0.08	0.08	0.08	0	0.31	0.1	0.13	0.15
8	16	26	8	13	21	0	19	20	13	0.16	0.25	0.42	0.42	0.5	0.43	0.4	0.31	0.28
10	18	28	9	15	23	10	17	18	15	0.25	0.33	0.54	0.5	1	0.57	0.5	0.41	0.37
9	20	32	8	11	23	11	45	28	28	0.13	0.25	0.54	0	0	0	0.6	0.23	0.31
14	12	20	11	10	16	22	17	20	20	0.33	0.25	0.25	0.25	0	0.24	0.2	0.27	0.28
10	20	32	8	15	25	20	25	22	22	0.21	0.24	0.17	0.83	0.67	0.33	0.4	0.36	0.21
12	22	30	10	18	27	17	19	10	15	0.25	0.42	0.5	0.33	0.5	0.39	0.4	0.38	0.39
15	10	22	9	10	17	40	0	23	21	0.25	0.29	0.08	0.08	0.64	0.2	0.3	0.18	0.21
12	10	20	10	8	13	17	20	35	24	0.25	0.29	0.08	0.08	1	0.19	0.3	0.18	0.21
23	17	36	15	11	23	35	36	37	36	0.25	0.25	0.08	0.08	0	0.15	0.1	0.16	0.19
19	16	38	17	15	29	11	7	12	10	0.25	0.33	0.5	0.5	0.33	0.48	0.4	0.4	0.36
19	9	37	13	9	35	32	0	6	13	0.2	0.33	0.25	0	0.33	0.16	0.2	0.2	0.26
20	7	26	11	7	16	45	0	39	28	0.29	0.38	0.17	0.17	0.67	0.15	0.3	0.25	0.28
7	25	30	7	21	27	0	16	10	9	0.42	0.54	0.67	0.58	0.67	0.35	0.5	0.55	0.54
15	12	28	8	10	19	47	27	32	35	0.08	0.16	0.25	0.25	1	0.26	0.3	0.19	0.16
10	23	29	9	20	25	10	13	14	12	0.25	0.29	0.33	0	0.5	0.07	0.2	0.22	0.29
22	16	29	19	13	25	14	19	14	16	0.25	0.25	0.29	0.29	0.67	0.38	0.4	0.27	0.26
25	10	32	23	8	29	8	20	9	12	0.42	0.42	0.42	0.58	0.67	0.28	0.5	0.46	0.42
11	20	19	10	15	17	9	25	11	15	0.29	0.33	0.25	0.41	0.83	0.56	0.5	0.32	0.29
15	8	25	10	8	19	34	0	24	19	0.25	0.25	0	0	0	0.22	0.1	0.13	0.17
11	19	22	11	9	20	0	0	9	3	0.13	0.21	0.38	0.42	0.83	0.47	0.4	0.29	0.24
19	7	16	15	7	16	22	0	0	7	0.25	0.25	0.29	0.17	0	0.13	0.2	0.24	0.26

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
thenmozl	33	3	2	1	4	1	1	2	4	1	2	33	21	2	2
ravi	46	4	1	1	4	2	4	2	4	2	3	46	7	2	3
munusan	18	1	1	1	3	2	3	1	3	2	6	13	52	3	4
abdulkac	25	2	1	1	3	2	4	1	3	1	3	25	13	2	6
analaksh	38	3	2	1	5	3	1	2	5	1	3	38	17	2	6
seethala	31	3	2	1	4	4	1	2	4	1	3	30	52	3	1
nagaraj	27	2	1	1	5	5	1	2	3	2	3	24	156	3	1
vasuki	30	2	2	1	3	1	3	1	3	1	6	30	4	1	6
nagimab	21	2	2	3	5	1	1	2	5	2	1	20	52	3	1
gandhi	30	2	1	3	6	3	3	4	4	2	6	25	260	3	4
jeyalaks	32	3	2	1	3	2	1	2	3	2	6	26	208	3	1
sankar	45	4	1	1	2	5	4	2	4	2	3	42	156	3	1
ramesh	49	4	1	1	5	6	4	2	4	2	6	40	417	3	1
sivakuma	32	3	1	1	6	5	5	1	3	2	3	24	312	3	4
maduraia	43	4	2	1	4	2	5	2	2	2	4	35	365	3	2
eswari	27	2	2	3	2	1	1	5	5	2	3	27	13	2	6
krishnam	41	4	1	3	3	1	3	2	3	2	3	40	52	3	2
chitra	33	3	2	2	4	2	1	2	4	1	6	31	104	3	1
sasikala	29	2	2	3	2	1	1	1	3	2	2	26	156	3	1
rajeshwa	36	3	2	1	4	2	2	2	4	1	1	32	156	3	2
eswaran	33	3	1	2	1	2	4	1	3	2	6	25	365	3	4
ragamath	26	2	1	1	2	1	4	1	3	2	3	25	21	2	1
gowri	50	4	2	1	4	6	1	3	3	1	2	47	156	3	4
gajalaks	38	3	2	1	2	4	1	2	4	2	6	38	104	2	6
mohan	23	2	1	3	6	5	10	1	2	1	1	23	2	1	3
vigneshw	20	1	1	1	4	1	2	1	4	1	3	19	52	3	4
mohan	30	2	1	1	1	1	1	1	4	1	6	30	4	1	5
rafiq	44	4	1	1	2	1	2	2	4	2	6	40	208	3	2
manikand	25	2	1	1	6	2	3	1	3	1	2	23	4	1	3
anjalaks	32	3	2	3	7	5	1	2	3	2	6	29	156	3	2
indira	25	2	1	2	2	1	2	1	5	1	2	25	8	2	3
gaikwad	24	2	1	2	2	1	2	1	5	1	2	24	8	2	3
karpagar	22	2	2	1	4	1	2	1	4	2	3	21	52	3	1
ravidoss	38	3	1	1	2	1	3	5	3	2	6	35	156	3	1
gajalaks	22	2	2	2	6	1	1	1	4	2	2	19	156	3	1
dhanapa	40	3	1	3	1	1	3	2	4	1	6	38	52	3	4

Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
12	7	16	10	7	16	17	0	0	6	0.16	0.16	0.2	0.08	0.33	0.14	0.2	0.15	0.17
17	7	20	11	7	17	36	0	15	17	0.38	0.46	0.42	0.42	0	0.12	0.3	0.42	0.42
7	27	37	7	25	33	0	8	11	6	0.5	0.5	0.83	0	0	0.59	0.6	0.46	0.61
10	14	24	8	11	20	20	22	17	20	0.08	0.21	0.17	0.17	0.67	0.35	0.3	0.16	0.15
10	21	34	8	15	30	20	29	12	20	0.2	0.25	0.33	0.17	0.67	0.24	0.3	0.24	0.26
13	14	24	9	12	20	31	14	17	21	0.33	0.46	0.42	0.42	0.67	0.31	0.4	0.41	0.4
13	21	24	10	18	19	24	14	31	23	0.38	0.46	0.58	0.58	1	0.75	0.6	0.5	0.47
7	28	32	7	21	27	0	25	16	14	0	0	0.17	0.17	0	0.17	0.1	0.09	0.06
16	18	28	15	17	23	6	5	18	10	0.29	0.5	0.67	0.5	1	0.54	0.6	0.49	0.49
14	8	22	9	8	18	36	0	19	18	0.2	0.2	0.2	0.17	0.67	0.34	0.3	0.19	0.2
10	17	30	8	12	27	20	30	10	20	0.2	0.33	0.33	0.42	0.33	0.46	0.4	0.32	0.29
17	12	24	15	10	21	12	17	12	14	0	0	0.08	0.08	0.33	0.39	0.2	0.04	0.03
18	20	24	15	18	22	17	10	9	12	0.29	0.33	0.38	0.5	0.67	0.37	0.4	0.38	0.33
10	18	28	10	17	27	0	5	4	3	0.29	0.29	0.42	0.42	0.67	0.54	0.4	0.36	0.33
20	11	22	13	9	18	35	19	19	24	0.38	0	0	0	0.67	0.33	0.2	0.1	0.13
12	15	20	8	10	16	33	33	20	29	0.25	0.08	0.08	0.08	0.67	0.24	0.2	0.12	0.14
18	12	32	10	8	21	45	34	35	38	0.33	0.17	0.2	0.5	0.33	0.3	0.2	0.3	0.23
18	12	22	17	10	20	6	17	9	10	0.17	0.2	0.08	0.08	0.33	0.44	0.2	0.13	0.15
15	15	35	12	15	30	20	0	14	11	0.2	0.42	0.5	0.67	0.83	0.56	0.5	0.45	0.37
18	10	20	11	10	20	39	0	0	13	0.25	0.25	0.17	0.17	0.33	0.15	0.2	0.21	0.22
12	14	24	10	12	20	17	14	17	16	0.17	0.33	0.5	0.58	0.83	0.65	0.5	0.4	0.33
20	12	24	13	10	20	35	17	17	23	0.33	0.17	0.17	0.5	0.83	0.41	0.4	0.29	0.22
10	16	24	10	15	22	0	7	8	5	0.13	0.33	0.33	0.42	0.67	0.36	0.4	0.3	0.26
12	18	22	10	12	18	17	34	19	23	0.25	0	0	0	0	0.19	0.1	0.06	0.08
14	10	18	12	8	16	14	20	11	15	0.17	0.17	0.33	0.17	0.5	0.22	0.3	0.21	0.22
16	12	30	15	11	28	6	8	4	6	0.25	0.54	0.67	0.83	0.83	0.59	0.6	0.57	0.49
14	7	22	10	7	20	29	0	10	13	0	0.25	0.42	0.42	0.5	0.19	0.3	0.27	0.22
14	10	22	9	8	18	35	20	19	25	0.33	0.42	0.42	0.42	0.67	0.35	0.4	0.4	0.39
18	10	24	13	8	19	28	20	20	23	0.13	0.13	0.17	0.08	0.67	0.28	0.2	0.13	0.14
23	10	22	12	8	16	48	20	28	32	0.17	0.17	0.25	0.17	0.67	0.27	0.3	0.19	0.2
20	11	26	12	8	18	40	28	31	33	0.2	0.5	0.42	0.33	0	0.31	0.3	0.36	0.37
10	16	30	9	12	27	10	25	10	15	0.33	0.33	0.67	0.67	0.67	0.46	0.5	0.5	0.44
10	13	24	8	11	22	20	26	8	18	0.2	0.29	0.33	0.41	1	0.6	0.5	0.31	0.27
10	17	28	8	15	25	20	22	11	18	0.25	0.08	0.42	0.5	0.67	0.3	0.4	0.31	0.25
14	8	20	12	8	20	14	0	20	11	0.17	0.33	0.54	0.5	0.5	0.37	0.4	0.39	0.35
15	20	23	14	17	22	7	15	4	9	0.17	0.42	0.5	0.83	0.33	0.5	0.5	0.48	0.36

KEY TO MASTER CHART

AGE

<20 ---- 1

20-30----2

30-40----3

40-50----4

SEX

MALE –1

FEAMLE-2

RESIDENCE

1-URBAN

2-SEMIURBAN

3-RURAL

EDUCATION

1--- ILLETERATE

2--- < v STD

3---- VI TO VIII STD

4---- IX TO X STD

5--- XI TO XII STD DIPLOMA

6--- GRADUATE/PG

7--- PROFESSIONAL

OCCUPATION

1---UNEMPLOYED

2—UNSKILLED

3—SEMISKILLED

4-SKILLED

5—CLERICAL SHOP OWNER FARMER

6—SEMIPROFESSIONAL

7—PROFESSIONAL

MARITAL STATUS

1- UNMARRIED

2-MARRIED

3-WIDOW

4-DIVORCED

5-SEPERATED

SOCIOECNOMIC STATUS

1-UPPER

2-UPPERMIDDLE

3-LOWERMIDDLE

4-UPPERLOWER

5-LOWER

FAMILY HISTORY

1- YES

2 –NO

PATHWAY TO CARE

1-PHC

2-GH

3-PRIVATE PRACTIONER

4-ALTERNATIVE MEDICINE

5-MAGICORELIGIOUS

6-DIRECT

DURATION OF UNTERARED PSYCHOSIS

1-- <30DAYS

2 – 31TO 180DAYS

3—181 AND MORE DAYS

DIAGNOSIS

1--SCHIZOPHRENIA

2--DELUSIONAL DISORDER

3--ACUTE TRANSIENT PSYCHOTIC DISORDER

4--PSYCHOSIS NOS

5--MANIA WITH PSYCHOTIC FEATURES

6--DEPRESSION WITH PSYCHOTIC FEATURES

PANSS

POSITIVE SCALE

NEGATIVE SCALE

GENERAL PSYCHOPATHOLOGY SCALE

IMPROVEMENT IN SCORES BY 30% INDICATES IMPROVEMENT

PAS

PREMORBID ADJUSTMENT SCALE

AVERAGE OF

CHILDHOOD—6TO11 (a)

EARLY ADOLESCENCE – 12TO15 (b)

LATE ADOLESCENCE—16TO18 (c)

ADULT >19 (d)

MARRIAGE (e)

GENERAL SECTION (f)

ACADEMIC DIMENSION a+b+c/3

SOCIAL DIMENSION a+b+c+d/4

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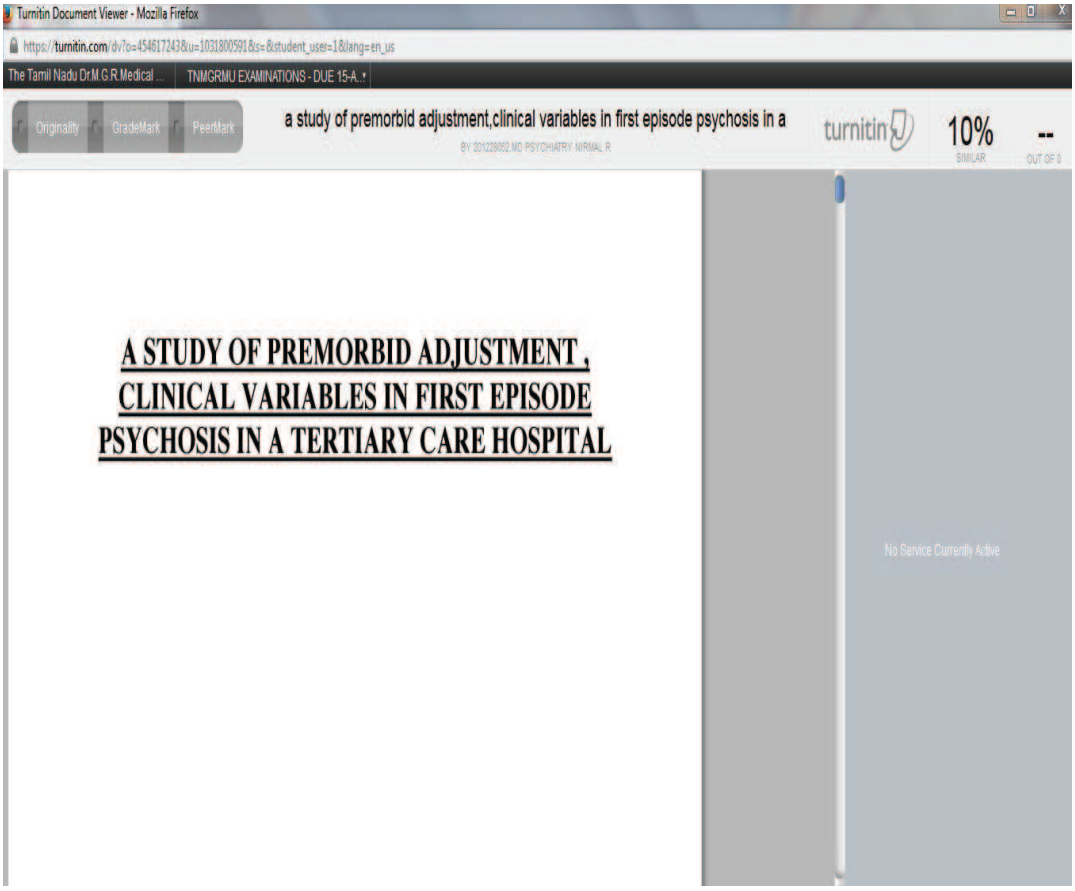
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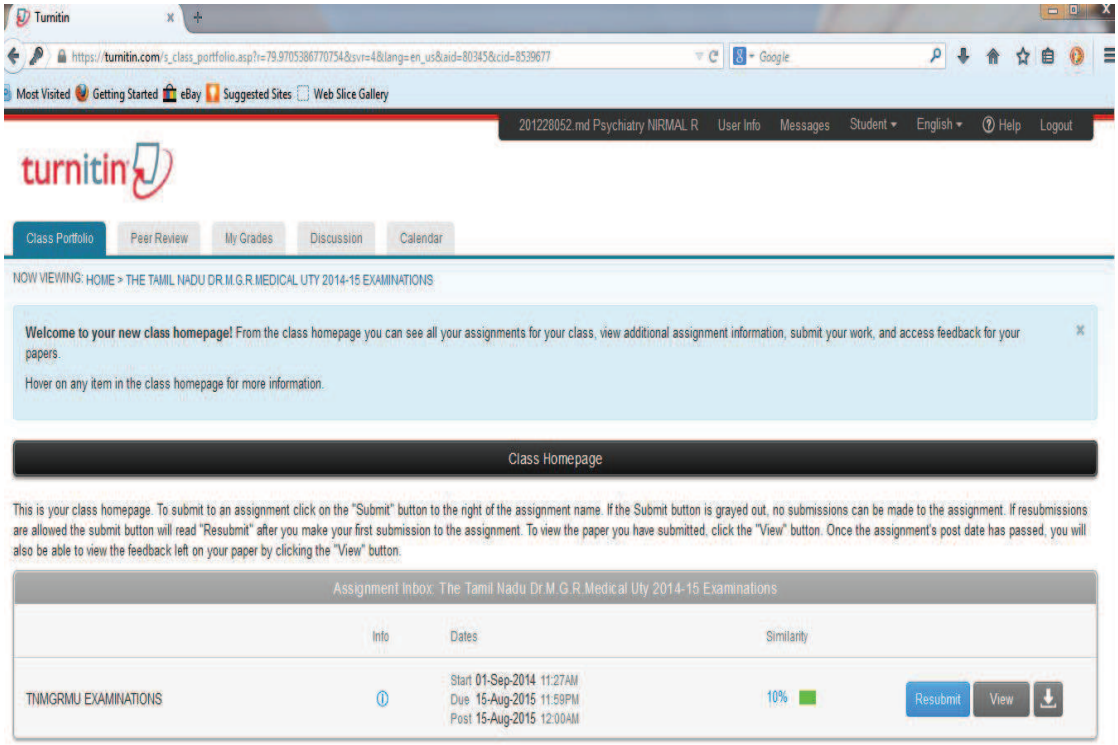
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